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EDMUND RUFFIN, EDITOR AND PROPRIETOR.

LEGISLATIVE AID TO AGRICULTURE.

No. II.

Agricultural Societies.

Agricultural Societies have as yet been the only establishments in Virginia designed as means to improve agriculture; and these have been planned, and carried into operation, (when any operation followed,) entirely by individual effort, and at the expense of the members of the several societies. Without exception, they have been so defective in their organization, and plan for working and for producing the ends designed, that but few have lived long enough to work at all; and those few which have possessed more vitality, have had almost no other element of value. Of the greater proportion of the many agricultural societies which have already existed in Virginia, the meeting and hearing the first address from the first president of the society, constituted the only public or known act, before the speedily sinking into death, or lethargy and oblivion. Some few individual members of some few of these societies have indeed presented very interesting and useful communications on agricultural subjects; but this merely proves, what no one would doubt, that agriculturists distinguished for intelligence and public spirit, are not divested of these qualities, and do not always cease to exercise them for the public good, in consequence of their becoming members of agricultural societies. But it is denied that the eliciting these communications has been caused by the fitness of any such society for that purpose. All these societies, though in different degrees, have been deplorably unfit to stimulate inquiry and effort, elicit information, or, in general, to promote the improvement of agricultural knowledge, in science or practice.

Lest this general opinion should be deemed too censorious, or as having special reference to societies still existing, and to their recent action, or inaction, (all of which is disclaimed,) we will here quote at some length, as expressive of our views of the general defects of agricultural societies, and the suitable remedies, the words of an article which appeared nearly six years ago, in one of the early numbers of this journal.

"A remarkable and notorious characteristic of Virginians is to commence the support of any good and popular scheme, with vehement and overflowing zeal; and having thus wasted their energy in the outset, to become weary, relax their exertions, and finally cease entirely to make them, by the time they are most wanting. Yet, perhaps, the deliberate judgment of each individual is as much in favor of the object, when he thus abandons its support, as when he first undertook, and gave all his strength, to commence the operation. We act more from feeling, than from reasoning. We start forward to aid a good cause, as most of us would rush to a joyous festival; and when the excitement of pleasure is over, we as readily yield to the reaction of feeling—the wearisomeness and lassitude which always follow the pursuit and enjoyment of mere pleasure.

"But besides this our national failing, which unfortunately affects all our public institutions, there are other evils which press particularly on agricultural societies, and are sufficient to destroy first their usefulness, and next their very existence.

"When the formation of an agricultural society is first proposed, there are plenty of members to be obtained. Each is willing to give his name to support the scheme; and he is willing also to add a little of his time, and a small contribution in money. But very few think of becoming *working members*, or of doing any thing as individual cultivators of the soil, to aid the object of the association. They meet at the stated times for one or two years—find that they have no communications to hear—each member thinks or declares that the society is useless, and wonders that it should be so—and finally, (and necessarily,) it sinks into contempt and dies, without even the little respect of a vote being taken for its dissolution. Of all these perfectly useless members, there may be scarcely one who might not have rendered some service, by making experiments or observations, and reporting the results: yet each one is kept silent and useless by false shame, and the fear (if he should make the attempt) of not being *distinguished* as an agricultural writer.

"So much for the mass of private members. Next let us look to the officers, on whom much more depends, to secure the usefulness and permanency of the society.

"When the society is first formed, one of the most aged, respectable, intelligent and popular members will of course be made the presiding and first executive officer, on whose zeal and energy, the success of the scheme must mainly depend. Such a man will generally be justly entitled to the love and esteem of his fellow-members—perhaps he will stand equally high as a farmer, or as a man of general and valuable acquirements. But if he wants zeal and energy, (as must be expected of most old men,) the highest other qualities will not make up for these deficiencies. After such an appointment, the high respectability and popularity of the individual forbids a change; and if he should prove an inefficient president, the society is soon *overlaid* and destroyed by his worth and dignity. The same observations apply, but with less force, to all the other subordinate officers of a society.

"To avoid these causes of danger to new societies, I will respectfully propose to those who may be their founders, a few innovations which I think will be found of use.

"I. Let the society be composed altogether of *working members;* and to be sure of that object, let no member be admitted, except he previously presents some report in writing, (however concise, or no matter how trivial the subject) of experiment made, or facts observed. Scientific and professional men, in their departments, could perform similar duties. Such a form of initiation would compel every member to "break the ice;"

and, generally, nothing more is wanting, to prove to them that they can do good service in this way to agriculture, and with credit to themselves. Let these reports, which would be presented as claims for admission, be always plain, simple and short; and in manner and form not beyond the imitation of any plain practical farmer. It would also be proper to require afterwards of each member, a small but certain amount of *working* service every year—as for example, the making and reporting of one or more experiments on some doubtful point in farming, or in any art or science connected with agricultural improvement. I do not mean to discourage the more general, speculative, and argumentative essays which have heretofore formed nearly all the communications to agricultural societies: but these might be safely left to be performed as voluntary duties.

"It may be objected that but few members would be obtained if such preliminary and regular duties were required. I think otherwise. Very few would object to write in the manner proposed, if it was made a duty, instead of being altogether voluntary, and if the performance was required of all without exception. But even if only ten members should unite on these terms, they would be more useful, and do more credit to themselves, than they could with one hundred more upon the ordinary plan.

"II. Let the duties of officers be so fixed and defined, as that the performance should be as little as possible affected by their individual characters and habits; and, by a fixed rule, require rotation in office, so that no officer shall serve two years in succession. Almost any member, who has zeal and activity, may fill well any office in a society—and a year's service would be sufficient to show in any a deficiency in those indispensable qualifications.

"If societies on something like this general plan were spread through Virginia, incalculable benefit to agriculture would be derived from thus instituting, accurately observing, reporting, and publishing hundreds of experiments, and ascertaining numerous important facts, which can be made known in no other way. If only twenty individuals, composing a society, would make so small a sacrifice as the duties would require, in as many as twenty different counties, and means were adopted to interchange communications, the result would be that each member would have the benefit of the labor of four hundred experimenters and recorders of agricultural facts, or scientific observations. Is not this an object worth seeking, and worth *working* to obtain? But if the plan was properly estimated, there might be ten thousand persons so operating, and they, and all the farmers of the commonwealth, enjoying all the benefit to be derived from combining all these many exertions of labor and intellect."

It may, at first, be deemed inconsistent with the previous expressions of general condemnation, that we should yet recommend agricultural societies as among the most effective means to improve agriculture. But it would be only upon a regular, uniform, and altogether different organization. The devising a proper plan of organization and of operation, should be one of the earliest and most useful labors of a board of agriculture; and the conforming to that plan should be the condition required for directing to each society a proportion of the state's bounty for this purpose.

Whatever might be the details of the plan, the operation and effect should be to induce *some action*, however small, by every member of every society, in learning and establishing agricultural facts by practical and careful experimenting, and in accurately reporting the results. There would be enough subjects of labor for all—from the philosophical chemist, operating solely in his laboratory, to the plain and even unlettered but judicious and sensible cultivator of the soil. The contributions to knowledge, which, in this manner, would be brought by the members of a single county society, would be very valuable to themselves and to the public, however small and apparently trifling each individual contribution might be. And when all the separate gatherings of fifty or a hundred county societies were brought together, by a state society, or the board of agriculture, and digested and put in form for general use, the amount of knowledge and of profit thus gained, in the course of a few years, would be beyond calculation.

The great advantage of thus operating through county agricultural societies, would be found in enlisting the aid of the labor and money of individuals to a very far greater amount than the treasury would, or could, alone pay for; even if paying money were sufficient to purchase talent and zeal. If the state were to offer $100, or even but $50 a year, to every county society which should contribute at least as much money, and in other respects would conform to the prescribed general plan of organization and procedure, it is likely that even that small encouragement would induce the formation of many societies, which would ultimately contribute ten times as much in money as they received from the treasury, besides their far more valuable exertions of labor and talent. To give more prominence, dignity, and effect, to the societies, they should by delegates meet annually in a general state society; and perhaps it might also be advisable to give that society more or less agency in filling the Board of Agriculture.

Agricultural Surveys

Would be excellent adjunct and co-operative means with properly organized agricultural societies, to aid the improvement of agriculture; or, they would well serve as substitutes for the societies before the latter are established, and encouragers and stimulants to them afterwards. Though proceeding by different modes, the proper end and objects of both surveys and societies are the same, viz: to gather together all the facts as to the existing state of agriculture, so as to inform the whole agricultural community of each useful particular practice, which is now known only in a small neighborhood, and to a few farmers. If this alone were effected, this general diffusion of the knowledge of the now existing but generally unknown improvements, and good particular practices in various parts of Virginia, would add at once many thousands of dollars of value to agricultural wealth in general throughout the state; which new value, would probably add immediately as much to the annual pecuniary profits of agriculture as would pay the annual expense of an agricultural survey, for as long as it should continue, and for as much cost of other aids to agriculture continued afterwards.

The great work of improvement effected by the

British Board of Agriculture was more especially produced by their very minute surveys and voluminous reports of the actual condition of agriculture in each county of the kingdom. Never was a great national expenditure more judiciously and profitably made; and unquestionable benefits were almost immediately obtained. The surveys had scarcely been in operation when they brought first to public knowledge two most important modes of improvement, which, though known and practised for many years in particular sections of England, had never been known, or even heard of, elsewhere. One of these was the plan of "warping," or raising and making great and valuable additions to the soil of alluvial lands, by arresting the muddy contents of tide-waters; and the other was Elkington's plan of vertical draining, which, when thus made known, obtained for the discoverer the distinguished and rare honor and reward, of a parliamentary grant of £1000. But though these cases are more manifest, and therefore more striking, it is likely that there were hundreds of others, of more general application and value, of which the knowledge was diffused by these surveys, to the hundred-fold greater profit of agriculture.

Though surveys, being executed by but few persons, would in some respects be of much less value than *working* agricultural societies, which would combine the labors of many individuals, yet the former would have a decided advantage in one important respect. Agricultural societies, however zealous and industrious, would not report much else than the good or commendable practices, or such as were so deemed. But surveyors would be required to exhibit the actual state of agriculture—the defects and the evils, as well as the subjects for approval and imitation. This would be an important part of their duty; and to know fully the existing evils caused to agriculture by ignorance and bad management, would be one of the most important preliminary steps towards reform, both general and particular.

The intimate acquaintance which the members of an agricultural society would have with the soil and agriculture of their own county or district, would be a very important advantage to their investigations, which would be wanting to a surveyor of districts to which he was almost a stranger. But on the other hand, the stranger, if a judicious observer, will be apt to be struck with many subjects of interest and value to all persons similarly unacquainted with the locality and its practices; and which residents there would not appreciate, whether for good or for evil, because they could not compare them fairly, and without prejudice, with other practices elsewhere.

In the present very imperfect state of our agriculture, it would not be requisite to have surveys made as minutely, nor reports as voluminous, nor to be at an expense, for the whole, at all approaching to those of the English Board of Agriculture. A very cursory and general, though correct view and exhibition of Virginian agriculture in its present state would suffice for this part of a general system of action; and at a future time, when great improvements had been produced, there would be more inducement for having surveys conducted more carefully, and reported more in detail.

The state of Massachusetts has the honor of having led the way and offered the example to her more agricultural sister states, of ordering and supporting an agricultural survey. The agricultural commissioner of that state, the Rev. Henry Colman, is now actively engaged in that duty; and we doubt not but that the profit hereafter derived by the commonwealth will fully accord with the public spirit and liberality which induced the measure, and the distinguished ability of the individual selected for the labor. Yet Massachusetts is scarcely an agricultural country, so unkind are her soil and climate, and so much are her industrious citizens devoted to other pursuits. The interest of Virginia in agriculture, and the profit which might be derived from a like measure of improvement, are twenty fold greater than those of her noble sister Massachusetts.

In several of the next points for consideration we will merely copy views which have long ago been offered to the readers of this journal in another form, with merely such present additional remarks, as may be necessary for explanation or extension. The following passages are copied from the "Sketch of the progress of agriculture in Virginia, and the causes of its decline and present depression," published in Vol. III. of Farmers' Register.

Agricultural Professorships.

"If agricultural professorships were established in our principal institutions of learning, young landholders who are there acquiring liberal educations might easily obtain a competent knowledge of the general principles of agriculture, without sacrificing the other useful parts of scientific instruction. If this object would not be a sufficient inducement to remain one more year at college, it would be an advantageous exchange in such cases, if the study of theoretical agriculture, and its connexion with chemistry and some of the branches of natural history, took up the time usually devoted to metaphysics and the higher branches of mathematics—the study of which will be of use to but few men, except as a good mental exercise—a kind of *gymnastics* for the mind. It will be easy to ridicule the agricultural instruction that could be acquired from the lectures of a professor—a mere man of books and of theory. But though it is freely admitted that no such course of instruction, *alone*, could make a farmer, yet it would be the best preparation for the future acquisition of practical knowledge. It would be folly to look to the lectures of a professor for instruction in practical operations: but we might expect them to furnish the general and true principles of agriculture and its kindred sciences, (so far as they are connected,) without some knowledge of which no man can avoid committing continual blunders, and meeting with continual losses, as a practical tiller of the earth. For example: a farmer cannot know whether he is proceeding right or wrong in the very important operations of preparing, preserving, and applying manures, without some knowledge of the chemical ingredients of the materials used, of the changes produced by fermentation, and of the functions of the plants which are designed to be fed, and of the composition and properties of the soil intended to be enriched. Even a *little* knowledge on these points would serve to guard against serious waste and loss on every farm—the total amount of which makes a hundred fold greater national and annual loss, than all the expense of agricultural pro-

fessorships, and of every other means for instruction that I shall advocate."

Though fully maintaining the foregoing views as to the general advantages of an agricultural professorship, still it is proper to state an important objection to such an institution being among the *earliest* measures of aid to be adopted by the state. In the present very defective state of agriculture in Virginia, there is probably not a single individual who is qualified to fill such a professorship with credit and usefulness. Very little of scientific agriculture is known—and the best practical farmers, even if they were well qualified by their scientific attainments, are too fully and profitably engaged on their own farms to accept such a post. It could not possibly be well filled at present; and therefore this benefit to agriculture, great and valuable as it would be under different circumstances, should not be attempted until other, and more available and sure means, had been permitted to operate.

Experimental Farms, or practical Schools, for experimental agriculture.

"Experimental farms, under proper direction, would also serve a most valuable purpose for increasing general agricultural information. But it would be a mistake, fatal to the object in view, if such establishments were expected to present a system of pattern husbandry, or even to yield any clear pecuniary profit whatever. Such expectations would necessarily be disappointed—and thus would cast discredit on the whole plan. Experiments, if judiciously conducted, and accurately reported, would be more effectual than any other means for conveying valuable information to the agricultural community. They *cannot* be made extensively by private individuals—for the plain reason that they require too much expense of time, labor, and, money, and, in general, are attended with loss, even when the results are most valuable for the information they give. A farmer might lose $100 by making a series of experiments, of which the results might yet be worth $100,000 to the community at large. Hence, it is in vain to hope for such proceedings, unless induced and supported by the funds of the community; and it is foolish to count on deriving direct and immediate profit from experiments, whether conducted by public bodies or private individuals. Yet this foolish expectation is very general—or at least it is commonly deemed sufficient ground to condemn and ridicule any experiments as worthless, if their immediate result is loss to the inquiring and public-spirited individual who instituted them. Yet who ever counted on deriving direct pecuniary profit from any course of experiments in chemistry or natural philosophy? And without many such costly and losing experiments, the world would not have obtained the benefits of the steam engine, of the machinery for spinning and weaving cotton, the modern processes of bleaching and coloring, and hundreds of other improvements in the arts. If judged by the test of profit, as usually applied to agricultural experiments, Watt and Fulton, and Arkwright, would have been pronounced mere fanciful schemers, if not fools, not only because of the expense of their experiments, but perhaps because neither of them could bring into operation the mechanical skill, and habits of business, necessary to the highest perfection and greatest profit of their splendid discoveries."

In the introduction to these numbers, there was presented, as a general illustration of legislative action and aid to agriculture, the manner in which new practices could be profitably tried and taught. The operation there described, as to silk culture, would belong to the department now under consideration; and it would be but one, (though now a very important one,) of the hundreds of doubtful or untried subjects which might be fully and correctly tested, and the value and worthlessness clearly established on an experimental farm, so as to instruct thousands of the result, who, without such instruction, would incur all the loss, either of neglecting to avail of a profitable practice, or of pursuing an unprofitable one.

An experimental farm would be an excellent precursor of an agricultural professorship, and would co-operate admirably with the professorship, after one is *properly* established. Such a farm then, in addition to its other more important uses, would be a great out-of-doors laboratory and apparatus for illustrating the scientific lectures of the professor of agriculture.

Though it never should be considered that an institution for agricultural experiments is to be a model or pattern farm for general husbandry, or for any regular system of operations, (which indeed would be subversive of its proper design and greatest value,) and though loss, instead of profit, on the whole, must be caused by any such course of experimenting—still some particular and important experiments or new practices may be found profitable from the outset, and by their profits, may help to sustain the cost of others. Thus, if the state, on an experimental farm, had led and pointed out the way to the great improvements which have recently been made in lower Virginia, by the use of marl, it may be presumed, that all the usual wastefulness of public works would not have prevented that business proving highly profitable to the institution, in a pecuniary point, though in an inferior degree to the profits of private adventurers. A state institution, if existing, might have introduced this great improvement fifty years earlier than it has been done by individual exertion and risk; and if such had been the case, the commonwealth would now be twice as rich and as populous as it is. But without counting on new experiments being profitable to the institution, and even if such directly profitable exceptions to the general rule were to be altogether wanting, still the indirect and resulting profits to the commonwealth would be sufficient to make the most ample return for all the cost and loss incurred.

"It has often been recommended, and by high authorities, that *pattern farms* should also be established, to teach agriculture by example. This we should strongly oppose—and for the reason that, from necessity, what might be *named* a pattern farm, would *prove* to be any thing but an exhibition of good and profitable husbandry. Instead of attempting such an establishment, it would be better to make use of, as an additional course of *practical* instruction, the now existing farms of many private individuals, which are truly patterns of good and profitable management. Many such farms might be named, deserving the character, in various parts of Virginia. It is evident that no

one of them, even if managed in the most perfect manner, according to its location, and the peculiar circumstances of its proprietor, could serve as a general pattern farm. But one, for example, might exhibit a pattern for clover fallow and wheat culture, on the singular and valuable "red land" of the Southwest Mountain slopes—another for the same, on the rich, flat loams of James River—another would show the profitable combination of tillage and grazing west of the Blue Ridge—another, the best mode of tilling and enriching the more sandy lands of lower Virginia—and all might accord in some common points of resemblance, in addition to the merit of excellent general management. The proprietors of such farms might very properly be considered as *adjunct and practical professors of agriculture;* and would render important services as such, by each receiving in turn, as pupils, two or three of the young men who had previously passed through the course of theoretical instruction. On these farms, and under such instructions, a young man could learn more of practical and profitable agriculture in a few months, than from his own solitary and unassisted efforts on his own farm, continued throughout a long life."

From the Gardener's Magazine.

ORANGE GROVES OF FLORIDA.

By Alexander Gordon.

The following remarks are the result of observations made during an extensive and varied tour, (just terminated,) over an extent of several thousand miles, in prosecuting which I have seen much which I consider both instructive and interesting. For the present I purpose confining myself to a few brief observations on the state of the orange groves, &c., at the city of St. Augustine, E. F.

You, of course, are aware, St. Augustine is one of the oldest, if not the very oldest city within the jurisdiction of the United States, and has long been a place of great resort for invalids afflicted by the pulmonary and bronchial complaints. I had visited this city in 1831, and I confess I was in perfect raptures with its diversified beauties, but particularly with its *orange groves.* It then appeared like a rustic village, the white houses peering from among groves of this delightful fruit which grew in the greatest luxuriance. The clustered boughs covered with their golden produce, yielding a rich harvest to the owners, and affording a delightful shade to the foreign invalid, when he cooled his fevered limbs and imbibed health from the perfumed atmosphere. While the ear was gratified and the feelings soothed by the various notes of that delightful songstress the mocking bird which found a ready shelter amid their verdant foliage. But, alas! on my visit the past spring, in vain did I look for those rural bowers, so gratifying to the eye and invigorating to the system. Not a single tree of any magnitude to indicate its former grandeur. The imagination could scarcely conceive such a perfect metamorphosis. For a long period of years, the orange had had flourished without interruption from frosts or other casualties. The city of St. Augustine was peculiarly favorable for this semi-tropical fruit. The soil is naturally sandy, but rich in calcareous and vegetable deposits, consequently well adapted to the growth of the orange and other horticultural pursuits. When I was there in 1831 the orange had become the staple commodity of the city's commerce, and subsequently to that time I understood several millions had annually been exported. Numerous groves of young trees were planted, and $10,000 had been refused for a grove consisting of only 2 or 3 acres. Extensive nurseries could scarcely supply the demand for young trees. A vast and lucrative field opened to the enterprising horticulturist. On the native orange were engrafied the choicest varieties of other climates with the most perfect success. Prospects of immense wealth seemed beyond a doubt, but

"There came a frost—a withering frost."

During the month of February, 1835, East Florida was visited by a severe frost, much more severe than any before experienced. A cutting N. W. wind which blew ten days in succession, but more violent for about three days. During this period the mercury sank 7 degrees below zero. The St. John's river was frozen several rods from the shore, and afforded the astonished inhabitants a spectacle as new as it was distressing. The orange, the fig, and all kinds of fruit trees were killed to the ground; many of them were completely annihilated; but a considerable number have started again from the roots. The wild groves in Florida suffered equally with those cultivated, at all events as far south as Lake George, and the inhabitants were thus deprived at one fell swoop of their only resource. But on my visit, in the month of April last, I was happy to find the inhabitants were not totally discouraged, for there are many thousands of young trees now ready for planting out, and in a few more years, it is to be hoped, St. Augustine will again exhibit its wonted appearance. The oranges grown here were considered decidedly superior to those imported from the West Indies, and as so long a period has elapsed since they experienced so calamitous a visitation, (I believe not since 1775—6,) it certainly is worth while to persevere.

CLIMATE OF LOUISIANA.

The Natchez Free Trader is publishing a lecture delivered by Dr. S. A. CARTWRIGHT before the Mississippi Lyceum. This lecture is much in favor of the climate of Louisiana. Speaking of the parishes south of the 30th degree of north latitude, it says:

"In 1830, they contained 38 persons over 100 years of age, whereas the whole of the New England States, with a population of 1,954,704, including upwards of 20,000 negroes, only contained 35 persons over 100 years of age. France, with 36,000,000 inhabitants, only contained 537 persons over 100 years of age. If France were as favorable to longevity as the land of the Jussieua Grandiflora, it ought to contain upwards of 16,000 individuals over 100 years of age.

"The persons who die in the northern states, in the prime of life, by consumption, typhus and inflammatory complaints, are about equal, or even exceed the number which die in the south of ma-

larious diseases. But the region of the country in which the Jussieua Grandiflora flourishes, is, from its mild climate, comparatively exempt from consumption, typhus and inflammatory affections; and by reason of the anti-malarious properties of the plant, it is singularly exempted from all that tribe of diseases which are produced by marsh miasmata, or by the unwholesome air of swamps called malaria. The plant, it would seem, converts into its own nutriment those very impurities of stagnant water which in other situations load the atmosphere, at certain seasons of the year, with noxious effluvia."

[The rare quality attributed above to the Jussieua Grandiflora is sufficiently valuable and important, as well as strange, to deserve being more fully stated and explained. We confess our entire ignorance on the subject, and will be glad to receive, from any better informed source, a full account of this remarkable plant, the effects which it is supposed, or known, to produce, and to what distance, northward, its growth and operation may be extended.—ED. FAR. REG.]

From the Southern Agriculturist.

SECRET FOR MAKING NEW [AND EXCELLENT] WINE.

[An esteemed friend handed us the subjoined documentary evidence, in support of the pretensions of Mr. Da Costa, to the possession of a secret for making "new wine in *six* days," and for converting "most inferior" into the "most excellent wines in the space of *two weeks*." The gentlemen subscribing the certificate furnished Mr. Da Costa, have not said they all saw the process of making new wine in six days, and improving most inferior wines in two weeks, but as their respectability forbids the slightest suspicion of their countenancing a trick of this or any other kind, we must presume they did all see the wonder performed. Another reason for believeing *they all saw* the grape converted into excellent wine in *one week*, and undrinkable, into good wines in *two weeks*, is to be found in the fact that two of their number have agreed to pay FIFTY DOLLARS each, "so soon as he (Mr. Da Costa) shall deliver Mr. James S. Guignard full and ample directions in writing, showing clearly the proper mode and manner of making, improving, and clarifying of wines, as it is practised by him in their presence," i. e. in the presence of James S. Guignard, and Dr. Percival. The N. B. by Mr. Da Costa, we will believe the ebullition of honorable pride—strong in its truth. He claims the "system as his own," and he has good reason to be proud of a discovery, which must rank, in point of value and usefulness, among the most important of our times.

We commend Mr. Da Costa to the partonage of all the Agricultural Societies in our state. Hitherto, fear of the rot has been a bar to cultivating the grape upon a large scale. Mr. Da Costa now offers a remedy for, or a preventive of, this disease, and we trust he will find among us such liberal patronage, as to induce him to remain here. He has "lost his country and every thing there"—cannot we make him forget that loss? Let us try.

At present, the merchant is the most deeply interested in this wonder working discovery, and for his especial benefit, we request the editors of our daily papers to republish Mr. Da Costa's letter, and the documents inclosed. Many dealers have wines they are almost ashamed to sell, but cannot afford to give them away, or afford even, the loss by sales at auction. Let such purchase the secret; it is worth FIFTY dollars, and, be it remembered, it will, unlike any other tax, be but once paid.

If Mr. Da Costa's system promises to prevent rotting of the grape, every vine growing country in the world is interrested in his discovery; and as he is with us, he should be aided and encouraged in his experiments—if experiments they are; if they are not, and his offers are based upon established facts, he should be kept among us at almost any cost. The late Mr. Herbemont, of Columbia, proved to the conviction of the most sceptical, that the grape can be cultivated to greater advantage than cotton of any name, or staple. The friends of our country generally, and of *economy* and *temperance* especially, should zealously encourage every effort to make the culture of the vine one of our ordinary pursuits.

Ed. South. Agr.]

Columbia S. C., 13th October, 1828.

My much esteemed Sir,—Permit me to take the liberty to address myself to you on this occasion, for the purpose of making you acquainted with my art of preparing wines and vines; because you and your friends may have want of me in your city. In such case, if you could assure to me a good portion of bad wine, wine of the most inferior quality, good for nothing; wine with bad taste and bad smell, almost vinegar; I can make it become *excellent wine* in the space of two weeks only. It is a fact; and the documents that I have the honour to inclose within, will prove to you my assertion. Please excuse me the liberty I take. Should you be so kind as to give me your answer, I will be ready to go to your city in the month of December next. Yours, truly and respectfully,

CORREA DA COSTA.

To J. R. VALK, Esq.

We, the undersigned, having seen and tasted the new wine made in *six days*, by Mr. Correa Da Costa, and also, the *very inferior wines* improved by him in *two weeks*—take pleasure to declare and certify, that the system of Mr. Da Costa is entirely commendable, as it is certainly the best American wine we have seen, both for quality and flavor, as well as expedition. In the space of *one week* from the gathering of the grapes, every vine planter may have excellent wine ready for sale; and the *most inferior wines* can be made into the *most excellent wines* in the space of *two weeks*, when prepared by the system of Mr. Correa Da Costa.

Mr. Correa Da Costa also informs us that his art extends to the planting, rearing, trimming, grafting, inoculating, and cultivating the vines—and he is of opinion that a vineyard attended to un-

der his management, will be free from that destructive malady, the rot, which has so often blasted the fairest prospects.

Columbia S. C. Oct. 5th, 1838.

James S. Guignard,	Owen McKiernan,
Alexander Herbemont,	Col. McCord,
Dr. Percival,	I. D. Mordecai,
Dr. Wells,	Robt. Mayrant,
Dr. Marks,	John Nuffer,
Dr. Fitch,	Maj. Thos. Taylor,
G. W. Daniel,	A. S. Johnson,
Sidney Crane,	Major Starke,
W. B. Thomas,	Dr. John Wallace,
Kinsler, McGregor & Co.	Col. W. Hampton.
A. L. Kline,	Dr. J. G. Guignard,
P. W. Knapp,	Benjamin Tradewell,
Aug. W. Eaton,	Dr. E. W. Fisher,
Dr. Gibbes,	Dr. John Fisher,
James L. Clark,	E. Friday.
Col. Preston,	

Columbia, Oct, 8, 1838.

From the specimens exhibited by Mr. Correa Da Costa, of his improvements of bad and inferior wines, we deem that much benefit will result to the wine makers and vine growers of this state, by obtaining his art of so doing. We do, therefore, for the purpose of obtaining his *valuable secret*, promise to pay to him the sums opposite to our respective names, so soon as he shall deliver to Mr. James S. Guignard full and ample directions in writing, showing clearly the proper mode and manner of making, improving, and clarifying of wines, as it is practised by him in our presence. And should any of us wish to have our wines improved, we are not to pay to him more than twenty-five cents per gallon, exclusive of ingredients, and *which secret we are to keep to ourselves.*

James S. Guignard,	$50
Dr. Percival,	$50

N. B. A good impostor may deceive a half dozen fools in a large place, but the "*American wine*," after having been improved by my own hands, according to *my own system*, and in the presence of Major Guignard, cannot deceive *thirty-one* respectable gentlemen in Columbia. Every person that has compared the samples of the inferior wine with the same wine improved by me in *two weeks*, has expressed his amazement for such wonder. It is a fact, it is *not* a trick. My *improved* wine is *immortal*; keeps for ever, and every day becomes better. With regard to my *new wine* made in *six days*, I think it is a enough to be mentioned, to be declared a wonder. Both wines have been seen and tasted by a respectable community of this town, and I have the glory to offer my services to Columbia with *my system of preparing wines and vines*—a good source of speculation and profit. I have trusted my secret to Major Guignard, and as he has seen every thing that I have made, to him I refer those that say with the incredulous disciple," it is necessary to see for to believe it." The fact is that it is the true transubstantiation of the wine. The knowledge of this united system is absolutely necessary to all vine growers and wine merchants. Wine, worse than vinegar, that has been sold at 12 cents per gallon, is now *excellent wine;* vineyards which have produced *only rotten grapes*, will, in the future, produce excellent crops of aromatic juice for making *American wine*, in order to rival the best *improved wines* imported from Europe. The new wine made in *six days*, requires the expense of *four dollars only, in each* 120 *gallons of juice.*

Messrs. Abram Geiger, has about 60 acres of land planted with vines; Herbemont 40 acres; Guignard 12; Neuffer 10; and perhaps 10 acres more belonging to Dr. Percival, Dr. Marks, J. L. Clark, D. Ewart and L. Sherman: all these vineyards *cultivated as they ought to be* would yield a profit exceedingly superior to a plantation of cotton of the same extent.

Having unfortunately lost my country and every thing there, however, I can manage the sword and the plough alike. In the four years of my emigration, I have travelled throughout all Europe: I have visited the capitals of *all nations;* and I can declare better that any body else, that Guignard wine, Richland wine, Amaranth wine, and Costa Madeira, can be transported to Europe, and be presented at the best tables, because they are, if not superior, at least equal to the best wines made *and prepared* in Madeira, France and Spain.

All these wines are now ready for sale, at Mr. Sidney Crane's, at $1 per bottle.

Persons wishing to have for themselves the secret of making new wine in *six days* (which, of course, is a great acquisition for the next vintage) and also the secret of improving bad wines in two weeks, are invited to call at Mr. Guignard's office at the Court house, where the list of subcribers is open for that purpose.

CORREA DA COSTA.

CURIOUS EXTRACTS FROM THE ANCIENT LAWS OF VIRGINIA.

(Continued from No. 9.)

The next enactment (of 1645) which will be presented was an important measure of reform, and a considerable approach made towards the better security of popular rights.

"Whereas the anncient and vsual taxing of all people of this collony by the pole, equally, hath been found inconvenient and is become insupportable for the poorer sorte to beare, This Assembly haveing taken it into considerations have for their reliefe hereafter thought fitt to alter the same: Be it therefore enacted, That all publique leavies and county leavies be raised by equall proportions out of the visible estates in the collony, The conformity of the proportions to be as followeth, (vizt.)

One hundred acres of land at	04 lb. tobacco.
One cow, 3 years old at -	04
Horses, mares and geldings at	32 a peece.
A breeding sheep att - -	04
A breeding goate at - -	02
A tithable person at - -	20"

—*Statutes at Large*, p. 305, vol. I.

At the same session, the lawful money of Virginia was changed from tobacco to coin. The first part of the act is as follows:

"The Governor, Council and Burgesses of this present Grand Assembly having maturely weighed and considered how advantageous a quoine current would be to this collony, and the great

wants and miseries which do daily happen vnto it by the sole dependency vpon tob'o. have at length resolved and enacted, and be it by the authoritie aforesaid enacted as the onely way to procure the said quoine and prevent the further miseries, That all peeces of eight in Spanish money be valued and taken in payment, att the rate of sixe shillings and all other Spanish silver quoines proportionably which shall be brought into the collony: And whereas it is conceived that the said quoine will not continue with vs vnless we have a leger quoine, Therefore serious consideration had of the many wayes tending to that effect, It was at length generally allowed, That a quoine of copper would be the most beneficial to, and with most ease procured by the collony, And that after proclamation made by the Governour and Council that all person or persons within this collony whether merchants or others do desist or leave off tradeing for tob'o. vpon the penaltie and forfeiture of the thing so bought or sold, The one moyetie whereof shall be and come to the informer, and the other to the benefit of the state."—p. 308.

In 1647 the former law compelling the planting of two acres of corn per head, being found insufficient, was again strengthened by additional guards and penalties.

The next act prohibits the exportation of corn, and limits the price of all sold in the colony. Such restrictions would necessarily operate to discourage the production, more than could be counteracted by all the enactments to compel planting.

"Whereas the great scarcity of corne is like to produce much want and misery to divers of the inhabitants, vnles timely prevention be made by prohibiting of exportation of corne, and against hoarding and ingrossinge thereof, to the intent to exact vpon theire poore neighbours by extream and vnreasonable rates to the vtter vndoing of whole ffamilies: Bee it therefore enacted by this Grand Assembly that no person for this ensueing yeer shall exporte any manner of English or Indian graine or corne out of the lymitts of the collony, in which act all strangers as well as inhabitants are included; Add for preventing of all hoarding and ingrossing of corne, It is alone enacted, That noe person or persons whatsoever shall sell, bargaine, barter or exchange any Indian corne either directly or indirectly above the rate or valew of one hundred pounds of tobacco per barrall, vpon the penalty of five hundred pounds of tob'o. for every barrell of corne that shall be exported as aforesaid, The moyetie of which fine and forfeiture shall be and come to the King's Majestie and the other halfe to the informer."—p. 347.

The taking of fees by attorneys, and the profession itself, were not put down by the former act; and therefore the following was added:

"It is thought fitt that vnto the act forbidding mercenary attorneys,* It bee added that they shall not take any recompence either directly or indirectly. And that it be further enacted, That in case the courts shall perceive that in any case either plt. or defendant by his weakeness shall be like to loose his cause, that they themselves may either open the cause in such case of weakness or shall appoint some fitt man out of the people to plead the cause, and allow him satisfaction requisite, and not to allow any other attorneys in private causes betwixt man and man in the country."—p. 349.

In the same year, (1647,) was revived a former act, forbidding the legal recovery of any "wine or strong water debts."

At the session of 1656, efforts to encourage silk culture by law, which had been so early adopted as the policy of the government, were again made, by the following acts.

"Whereas by experience silke will be the most profitable commoditie for the country (if well managed) and as the greatest conducement therevnto required, is provision of Mullberry trees, *Be it enacted and confirmed by this present Grand Assembly* that everie proprietor of land within the collony of Virginia shall for everie one hundred acres of land holden in ffee, plant vpon the said land tenn mullberry trees, at twelve foote distance each from other, and secure them by weeding, and a sufficient ffence, from cattell, horses, &c. between this and the last of December, 1658, and for everie tree that shall be wanting, or vntended in manner aforesaid of the said proportion at the said last of December, 1658, he the said proprietor that shall be soe delinquent shall pay tenne pounds of tobacco," &c.—p. 420.

"That George the Armenian for his encouragement in the trade of silke and to stay in the country to follow the same have four thousand pounds of tobacco allowed him by the Assembly."—p. 425.

At the next session (1657—8) the following additional regulations were enacted, to encourage silk and other products.

"For the better encouragement of the inhabitants for the makeing of staple commodities in this collonie, *Bee it enacted by this present Grand Assembly* that what person or persons soever shall at any time hereafter make in this collonie so much silke, flax, hopps or any other staple comoditie (except tobacco) as is worth two hundred pounds sterling, or English wheate to the value of five hundred pounds sterling in one yeare and exporte the same or cause the same to be exported, or shall first make two tunne of wine raized out of a vineyard made in this collonie shall have given him by this countrey for an encouragement ten thousand pounds of Virginia tobacco.

Wheate valued at five shillings per bushell.
Silke at twenty shillings per pound.
fflax at six pence per pound.
Hopps at twenty shillings per hundred.

What other staple comodities shall be raised to be valued by the Assembly."—p. 469.

At the same session, the following act was passed.

"Whereas it is generally supposed, That the makeing of silk will much conduce to the good of this collony, *Bee it therefore enacted by the authoritie aforesaid* that what person soever shall first make one hundred pounds of wound silke in one yeare within this collony shall for his so doe-

* Act VII of Nov. 1645.

ing be paid ffive thousand pounds of tobacco out of the publique levie."—p. 487.

The exportation of hides, iron and wool, was forbidden under heavy penalties at this session. The exportation of mares and sheep had been forbidden some time previous. It is surprising how long a time was required, and through what a course of loss and injurious experiments, for our ancestors, and the rest of the world, to learn the truth of the simple maxim of political economy, that to encourage the production of commodities, it is best not to restrict their sale, or circumscribe their market.

Two more silk laws were passed at the session of 1658—9.

"Whereas the act for mulberrie trees seemes rather troublesome and burthensome then any waies advantageous to the country, *It is hereby enacted*, That the said act for planting mulberrie trees shall be repealed and made void."—p. 520.

"For incouragement to the makeing of silke, *It is enacted*, That whosoever shall make ffiftie pound of wound silke shall receive from the publique as a reward of his dilligence tenn thousand pounds of tobacco, *Provided* he prove it to be all of his owne makeing."—p. 521.

Additional penalties were imposed at this session to prevent the "ground-leaves" of tobacco being sold. The prohibition of the exportation of hides and old iron was repealed.

The preamble, or recital of reasons, for the "Act for suppressing Quakers," passed 1659—60, is curious, and characteristic of the age.

"Whereas there is an vnreasonable and turbulent sort of people, comonly called Quakers, who contrary to the law do dayly gather together vnto them vnlaw'll Assemblies and congregations of people teaching and publishing, lies, miracles, false visions, prophecies and doctrines, which have influence vpon the comunities of men both ecclesiasticall and civil endeavouring and attemping thereby to destroy religion, lawes, comunities and all bonds of civil societie, leaveing it arbitrarie to everie vaine and vitious person whether men shall be safe, lawes established, offenders punished, and Governours rule, hereby disturbing the publique peace and just interest, to prevent and restraine which mischief, *It is enacted*," &c.—p. 532.

The following brief entries are some of the "Extracts from the minutes of the proceedings of the Governor and Council of Virginia," at an earlier time of the colony.

"*Dec.* 16*th*, 1631.

Because Edw. Grymes lay with Alice West he gives security not to marry any woman till further order from the Governour and Council.

March 25*th*, 1630. Tho: Tindall to be pillory'd 2 hours for giving my L'd. Baltimore the lye & threatning to knock him down.

6*th* 8*br*. 1631. The first informer of any slanderous reports of Governour or Council were to have the fine; this day one was whipt and lost his fine for concealing such a slander."—p. 551—2.

"1 *Feb.* 1632. Two maids got with child at sea, ordered to be sent back again."—p. 552.

"Stephen Reekes put in pillory 2 hours with a paper on his head expressing his offence, fined £50 sterling and imprisoned during pleasure for saying that his majesty was at confession with the L'd. of Canterbury.

Robert Sweet to do penance in church according to laws of England, for getting a negroe woman with child and the woman whipt."—p. 552.

At the session of 1660, the first after the restoration of the royal authority, under Charles II, among a medley of numerous orders of the "Grand Assemblie" are the following:

"Ordered that by reason of the vnconcionable rates, smiths do exact on the inhabitants of this countrey for theire worke, that the countie courts have power to regulate their accompts."—p. 11.

"Ordered that the horse way over Powatan swamp to James-Cittie be at Mr. Hunts mill and that he be allowed out of the levie next yeare ffive thousand, ffive hundred pounds of tobacco for repairing and maintaining the same for eight yeares except the county of James-Cittie before the tenth of ffebruary will vndertake the same on the same tearmes."—p. 12.

The last enactment, humble as was its object, may perhaps be considered as the first step taken by the government of Virginia to promote what in these times has been improperly termed "internal improvements"—or, correctly speaking, that one important branch of the internal improvement of the country, which is found in the construction of roads, canals, and other facilities for transportation and trade. It is greatly to be desired that the government would learn, and act upon, the truth, that to increase the products of the earth by wise legislation is still more necessary and profitable than merely to facilitate their passage to market. On this head, our legislators of the present day might profit by the example of their less enlightened predecessors; as, for example, in the next following order for defraying the expense of the first attempt to produce a new and valuable commodity. In this and sundry other such efforts, our ancestors were right in the principle, but their measures for encouragement of production generally failed, because the mode was faulty.

"Ordered that Daniel Dawen for his experiment of salte have his charges defrayed in towne out of the publique levie and bee exempted out of the Accomacke levie also."—p. 12.

The "rights of man" were not as yet well understood, or guarded very scrupulously. The "ordinarie sort of people" were not treated with much respect in those old times.

"Ordered that the honourable the governour have power to presse tenne men of the ordinarie sort of people, allowing each man two thousand pounds of tobacco per annum for theire services and to employ them toward the building of a state-house."—p. 13.

Session of 1660-1.

"Whereas the lowe prices of tobacco will hardly supply the urgeing and pressing necessities of the inhabitants of the country, and those necessities by the importation* and sale of superfluous commodities soe augmented that very few can with theire annuall labour defray their annuall charge by which meanes they are reduced to that extremity that not being owners of their owne commodity (spent before made) they are forced to part with it at what rigorous rate soever the exacting merchant will please to propose for prevention* whereof *Bee itt enacted* that noe strong drinke of what sort soever, nor silke stuffe in garments or in peeces (except for whoods and scarfes) nor silver or gold lace nor bonelace of silke or thread nor ribbands wrought with silver or gold in them shall be brought into this countrey to sell after the first of February next under penalty of confiscation of the said goods by the sellar to the governor to be exported and the value thereof by the buyer to that good common-wealth man that shall discover it."—p. 18.

"Bee it enacted that the order of the governor and councell imposeing five shillings on each barrell of privision exported be confirmed and continue in force until the end of July next and then to expire and after that the exportation to bee free."—p. 21.

"Since flax seede cannot be procured to sowe in the time limited in the act provideing for the makeing of six pound of yarne per poll, *Bee itt enacted* that the time of putting the said act in execution be prolonged untill the first of march 1662 and that afterwards it be strictly observed." —p. 26.

The last act of this session was to revive the act for planting mulberry trees, (copied above,) which had been repealed by the act of 1658-9.

At the session of 1661-2, another act was passed offering rewards for killing wolves, which, as the preamble recites, was necessary because "great complaint is made of the frequent and many injuryes done by wolves to the cattle and hogs of several inhabitants of this country." At that time, Henrico was the most western, or the frontier county of the colony.

As the assembly had thought it necessary to limit the fees and exactions of attorneys, millers and blacksmiths, it is not surprising that physicians also were put under regulation and restraint.

"Whereas the excessive and immoderate prices exacted by diverse avaritious and gripeing practitioners in phisick and chirurgery hath caused several hardhearted masters swayed by profitable rather then charitable respects, rather to expose a sick servant to a hazard of recovery, than put themselves to the certaine charge of a rigorous though unskilfull phisician, whose demands for the most part exceed the purchase of the patient, many other poore people also being forced to give themselves over to a lingring disease, rather then ruine themselves by endeavouring to procure an uncertaine remedy, for redrese thereof for the future, *Be it enacted* that it shalbe lawfull for any person or persons conceiving the accompt of the phisitian or chirurgion unreasonable to arrest the said phisician or chirurgion to the generall or county court where the said phisitian or chirurgion shall declare upon his oath the true value, cost, and quantity of the drugs administered, for which the court shall grant order against the plaintiff with fifty per cent advance, and such consideration for his care, visitts and attendance as they shall judge he hath deserved, and if it shall appeare by evidence that the said phisitian or chirurgion hath neglected his patient while he was under cure, the court shall censure him to pay soe much as they in their discretion shall think reasonable."—p. 109—110.

The preamble of the next act, for the encouragement of the growth and manufacture of flax, gives a woful account of the condition of the great staple commodity of the colony.

"Whereas the incertaine value of tobacco the unstaplenesse of the comodity & and the probability of its planting in other places, threaten this comodity with the danger of an unavoydable ruyne, which must in time fall upon it by the increase of the makers of it amonge ourselves (who have already glutted all marketts that greate quantityes are yearely left in the country, and that which is sent out sold at soe meane and inconsiderable a rate as neither merchant nor planter can well subsist by) unles some other course be spedily taken for the improvement of such other comodityes as the country will produce and making as many of them as we can into manufactures and giveing encouragement unto all persons of what ability soever to attempt it, which the former acts for encouragement to make staple commodityes have been defective in, by only proposing rewards to greate quantityes of every comodity made, when whosoever goes about, must if he faile be ruined, or if he make the quantity proposed will have noe need of the gratuity, which is better to be suited proportionably to the meanest quantity, *Be it therefore enacted* that the assembly this present yeare send into England for a considerable quantity of fflax seed to be distributed into the several counties and delivered to certaine persons who may sell it out to severall inhabitants and the produce thereof to be paid the yeare following with the levye, and the country stock by that meanes be made good, and the several inhabitants be enabled according to the ffiftyeth act of assembly 1661 to make their proportions of fflax, and whoever will spin the fflax and cause the yarne to be weaved into cloath of a yard wide, shall for every yard of cloath soe wove of yarne made of fflax growing in the country have three pounds of tobacco, and for every yard of woollen cloath made of yarne here spun in the country, five pounds of tobacco, which upon the prodnce of a certificate from some justice of peace in the county that he hath seene the same in the loome, and that to his knowledge it was really made in the country as aforesaid shall upon producing the same to the governor and councell be paid soe much in the public levye in the same county where they dwell."—pp. 120-1.

The act to compel the planting of mulberry

* The terminations *tion*, are generally written in the MS. "*con*."

trees, passed in 1656, and which had been revived at the previous session, was, at this, re-enacted at length, with heavier penalties and this additional provision.

"*And be it further enacted* that for the encouragement of all persons that shall endeavour to make silke, there shalbe allowed in the publique levy to any one for every pound of wound silke he shall make fifty pounds of tobacco to be raised in the publique levy and paid in the county or countyes where they dwell that make it."—p. 122.

The next act was designed to encourage the building of vessels, and the manufacture of salt.

"For encouragement of building vessels in this country and the promoting of trade: *Bee it enacted* that whosoever shall build a vessell of any burthen decked and fitted to goe to sea, shall for every tunn burthen the said vessell shall containe, receive upon proofe of her being soe built fifty pounds of tobacco out of the publique levy.

"Whereas Colonel Edmund Scarborough hath to his perticuler charge but to the infinite good of the country erected a salt worke for which he hath received deserved thanks of the last assembly, This assembly for his greater encouragement have thought fitt to grant him the use of the mony raised this yeare out of the two shillings per hogshead* in Northampton county with condition that he make repayment of the same to those the assembly shall allott it the next yeare in salt at two shillings six pence per bushell, and soap at

"*And be it further enacted* that after the first of September 1663, noe master of ship, barque or vessell or any person merchant or trader shall bring in any salt into the county of Northampton under the penalty of confiscating his ship, barque or vessell, and goods to the end that he and others may be encouraged in their industrious endeavours to promote the good of the country."—p. 122.

The provisions of the next act, to encourage the manufacture of leather, are even ludicrous, for the minuteness and yet palpable insufficiency of the details.

"*Bee it also enacted* that according to the fifth act of assembly 1660, there be erected in each county at the charge of the county one or more tanhouses, and they provide tanners, curryers and shoomakers, to tanne, curry and make the hides of the country into leather and shoes, and that the person intrusted with the oversight of the workmen, and manageing the trade doe allow to the inhabitants of the county for every dry hide they bring at the rate of two pounds of tobacco per pound, and sell them shoos at thirty pounds of tobacco plaine shoos, five pounds of tobacco for wooden heels and ffrench falls of the size largest sizes, and twenty pounds of tobacco per pair for the smaller shoos, and the county failing herein to be fined five thousand pounds of tobacco."—p. 123.

By the following act, free trade in general is again permitted:

"*Bee it enacted* that ffree trade be allowed to all the inhabitants of this country to buy and sell at their best advantage, and that all acts concerning ingrossing, be from henceforth repealed and made voyd; *Provided* always that noe person or persons shall have any comerce or trade with any Indians for Beaver, Otter or any other flurres except those commissionated by the governor." p. 124.

Yet, the two next acts to these are flagrant violations of free trade; the one renewing and enforcing the prohibition to export wool, hides, and iron, and the other to prohibit the exportation of any money, above the sum of forty shillings.—pp. 124-5.

"Whereas oftentimes many brabling women often slander and scandalize their neighbours for which their poore husbands are often brought into chargeable and vexatious suites, and caste in greate damages: *Bee it therefore enacted by the authority aforesaid*, that in actions of slander occasioned by the wife as aforesaid after judgment passed for the damages the woman shalbe punished by ducking; and if the slander be soe enormous as to be adjudged at a greater damage then five hundred pounds of tobacco then the woman to suffer a ducking for each five hundred pounds of tobacco (*a*) adjudged against the husband if he refuse to pay the tobacco."—p. 166.

The following first part of an act, too long to be copied entire, is a curious exhibition of the then prevailing ideas as to the most proper mode to induce the building of a town. A striking instance of the feebleness of legislation, when opposed to nature, is presented in the fate of the town of "James Cittie," for the durable construction of which so much care and such strong compulsory measures were here used. Not a single house of the town now remains standing, nor even one brick upon another, except in the ruins of the old church-steeple, and the wall of the adjacent church-yard.

"Whereas his sacred majestie by his instructions hath enjoyned us to build a towne, to which though our own conveniences of profit and securitie might urge us, yett encouraged by his majesties royall commands, to which in dutie wee are all bound to yeild a most readie obedience, this grand assembly taking into their serious consideration the best meanes of effecting it have in reference thereto enacted.

First. That a towne be built at James Citty as being the most convenient place in James River, and alreadie best fitted for the entertainment of workmen that must be employed in the work.

That the towne to be built shall consist of thirty-two houses, each house to be built with brick, forty foot long, twenty foot wide, within the walls, to be eighteen foote high above the ground, the walls to be two brick thick to the water table, and a brick and a halfe thick above the water table to the roofe, the roofe to be fifteen foote pitch and to be covered with slate or tile.

* 'Hundred' in Purvis, 'hogshead' in Northumberland MS.

(*a*) The words 'then the woman to suffer a ducking for each five hundred pounds of tobacco,' not in Northumberland MS.

2*dly*. That the houses shall be all regularly placed one by another in a square or such other forme as the honorable Sir William Berkeley shall appoint most convenient.

3*dly*. That for the better expediteing this worke, each of the severall seaventeen counties build one house, and to that purpose be authorized to impresse in each of the said respective counties bricklayers, labourers, carpenters, sawyers and other tradesmen necessary to be readie at such time as the governour shall think fitt.

"4*thly*. That for avoideing the exaction of workemen, the price of bricks, the wages of workmen and labourers, and their diett at the ordinaryes shall not exceed the prices following, vizt.

"Bricks being statute bricks and well burned, one hundred and fiftie pounds of tobacco per thousand; labourers besides diett two thousand pounds of tobacco by the yeare.

"Brickmakers haveing theire diett and six able labourers to helpe them, provided at his or their charge that employ them, and wood sufficient brought in place for each thousand bricks moulded and burned, fortie pounds of tobacco.

"Bricklayers haveing theire diett and three able labourers to attend each of them, for each thousand of bricks layed fortie (*a*) pounds of tobacco.

Carpenters per day besides theire dyett thirty pounds of tobacco.

Sawyers for boardes and summers one pound of tobacco per foot, for timber for joyce, windowes, door cases and rafters, principalls, purloyners and other smalle timber, the said sawyers finding themselves and labourers dyett, halfe a pound per foot in length."—p. 172.

More legislation in regard to mulberry trees was thought necessary at the session of 1663.

"Whereas there hath been an impossibility of procureing soe many Mulberry trees as every proprietor of land is by act of assembly enjoyned to plant for his proportion, being ten trees for every hundred acres; this grand assembly takeing the same into their consideration *have therefore enacted* that the time shalbe respited for three yeares longer, vizt. untill the last of December, 1666, and that whoever shall then be defitient shall for every tree wanting be fined twenty pounds of tobacco being double the fine already imposed."—191.

"George the Armenian having proved the making of ten pounds of wound silk it is ordered there be paid him for his encouragement in the levy according to act.

"John Dolby procuring certificate that he had made and wove nineteen yards of woolen cloth in Northton county, the assembly hath ordered him the encouragement according to act being tobacco.

"John Pitte producing certificate that he had built a vessel of 28 tuns in the Isle of Wight county, the assembly ordered him the encouragement of accordingly."—p. 199.

Among other "Propositions humbly presented to this honorable assembly" was the following:

"That the act for planting of mulberry trees may be repealed it being very prejudicial to such as want clear grounds and are not in a capacity at present to fulfill the same without great prejudice, and it is humbly conceived that (if it be beneficial) men as they find themselves in a capacity will fall upon it without constraint,"—p. 202.

The following are the general and material parts of "an act for a cessation" of the cultivation of tobacco for a limited time, passed in 1666. This was a favorite policy, both with the government and the people. But though it was often attempted to be put in force, it was to little advantage, from the non-concurrence of Maryland and North Carolina, as well as for more general and sufficient causes.

"Whereas the quantity of tobacco made in this country by encrease of the number of inhabitants imploying themselves wholly to the makeing that comodity, and their continued ffreedome of their unlymitted planting is become soe greate that all marketts have beene glutted with itt, and the value of it reduced to so low a rate that the planter is rendred incapable of subsisting, the merchant discouraged in his trade, and consequently by the decay of trade his majesties customes impaired, while the tobacco that formerly releived the planter, encouraged the merchant, and augmented the custome, both now and some yeares past did and doth rest perishing on the planters account, to his utter undoeing; the remedy of which inconveniencies the governour, councell and burgesses of this assembly takeing into their serious consideration, have found that the most proper and effectuall course to effect the same wilbe by enacting for one yeare a cessation from planting, In which vacant yeare time wilbe given to the planter to settle himselfe upon the finding out and improvement of some other staple (as wee have already begun in silke, fflax, and potash) the merchant encouraged to give a better price when he shalbe assured to have tyme to vend it, and his majesties customes noe way diminished, since the exportation of all the tobacco already made, and likely to be made this next crop, will in all probability (notwithstanding the cessation) equall the quantity of that which hath beene in the like tyme exported; ffor which consideration often message hath beene sent from the assembly of Virginia to the lieutenant generall of *Maryland*, to establish a stint or totall cessation from planting in both governments who have communicated the same to the assembly of that province, they being equally sensible of their pressures, have enacted a cessation with provisoe of the concurrence of this country of *Virginia* and *Carolina*, ffor which causes *it is thought fitt to enact, and be it enacted by the governour, councell and burgesses of this present grand assembly and the authority thereof* that from and after the ffirst day of ffebruary which shall be in the yeare of our Lord 1666 till the ffirst of ffebruary which shalbe in the yeare of our Lord 1667, noe tobacco shalbe any wayes sowne, sett, planted, or tended, directly or indirectly within the government of Virginia," &c.—p. 224-5.

The next is another example of misdirected attempts to encourage industry.

"Whereas the present obstruction of trade and

(*a*) 'Fifty' in Northb. MS.

the nakednes of the country doe suffitiently evidence the necessity of provideing supply of our wants by improveing all meanes of raysing and promoteing manufactures amonge ourselves, and the governours honour haveing by apparent demonstrations manifested that our poverty and necessity proceeds more from the want of industry then defect of ability, since that five women or children of 12 or 13 yeares of age may with much ease provide suffitient cloathing for thirty persons, if they would betake themselves to spinning, which cannot be objected against, if weavers and loomes were once provided; for the better effecting whereof, ***Be it enacted by the authority of this grand assembly*** that within two yeares at furthest after date of this act, the commissioners of each county court shall provide and sett up a loome and weaver in each of the respective counties of this country, at the charge of the county, and that noe private person setting up a loome at his owne charge shall excuse the county from setting up a publique one; But that every court neglecting to performe the tenour of this act shall be fined two thousand pounds of tobacco to the use of the publique and informer. ***Provided*** that the executing hereof in the counties of ***Rapahanock, Stafford,* Westmerland*** and ***Northumberland*** who by the newnesse of their ground pretend themselves incapable of makeing provision for the soe soone imployment of a weaver be respited for fowre yeares after the date hereof."—p. 238-9.

The next act repeals all prior acts for encouragement of silk, and other commodities, not upon the ground of their inefficacy, but for reason that they had so operated as no longer to be necessary. This assertion is not sustained by other evidence, and may well be refused credence.

"Whereas the providence and care of the publique good in former assemblies thought fitt for the advance and promotion of trade, manufactures and staple comodities in the country, to grant of the publique certaine encouragements for building of vessells, makeing of silke, cloath, &c. By which meanes diverse people being induced to put the same in practice, have by their successe made evident demonstrations how beneficial the same will prove; This assembly in hopes that all people now convinced of the profitts accrewing thereby will of theire owne accords vigerously prosecute those now apparently profitable designes, have therefore for the ease of the publique taxes *thought fitt to enact, as by this grand assembly and the authority thereof, it is enacted*, that all acts of encouragement of silke, cloath, building of vessells or any thing else may henceforth be generally and totally repealed and voyd, except the act for release of the impost of two shillings per hogshead to inhabitants of this country adventuring in vessells belonging properly and solely to Virginia owners, according to the one hundred and thirty fourth act of assembly; And moreover that the act imposeing a fine for not planting of mulberry trees which every one intended to make silke will now propagate voluntarily, be also repealed and made voyd."—pp. 241-2.

(To be continued.)

* This is the first time the name of *Stafford* occurs among the counties. In Mercer's abridgment, title 'Counties,' it is said to have been established in 1675.

To the Editor of the Farmers' Register.

Murfreesboro' N. C., Dec. 1, 1838.

Lately meeting, in a copy of the "Courier des Etats Unis," with a communication read in the French Academy of Sciences, by M. Roulin, on a subject which comes within the sphere of agriculture, I have thought that I might at least interest if not instruct your readers, by sending you a translation of it for publication in your valuable periodical. Should this be favorably received, I may possibly send you others during the winter.

B. S. W.

THE CHANGES UNDERGONE BY DOMESTIC ANIMALS ON BEING TRANSPORTED FROM EUROPE TO AMERICA.

Being part of an essay on that subject, read in the French Academy of Sciences, by M. Roulin, and translated for the Farmers' Register.

The observations of our author on this subject were made during a residence of six years, in a part of Colombia, extending from the third to the tenth degree of north latitude, and from the 70th to the 80th degree of west longitude. Although this space is limited, it offers a field very favorable for observations of this character; being traversed throughout its whole extent by the great chain of the Andes, divided here into three smaller branches, so that animals fitted for a temperature of ten degrees, (Reaumur) and those for a temperature of thirty degrees, may be found within a very short distance from each other.

Has the establishment in these regions of animals, transported from Europe, been attended with any remarkable phenomena? Once naturalized, do they remain, as they were in Europe? If they have undergone any permanent change, may not this new transformation throw some light upon that which they have formerly experienced in passing from the savage to the domestic state? These are the questions which would naturally present themselves to the student, and for the solution of which the author brings a great many facts relative to the different species.

The Mammiferæ.

The animals of this class, which have been transplanted from the old to the new world, are the hog, the sheep, the goat, the ass, the horse, the cow and the dog. These have become at this day much more numerous in the new continent than all the large native quadrupeds.

The HOG, considered as an occupant of warm valleys, or as roaming through the forests and seeking wild fruits, which, at certain seasons, compose his whole food, has passed almost all the marks of his domestic state. He has become again half-wild. In 1493, one year after the discovery of America, the first hogs were introduced into this country, in the island of St. Domingo. In succeeding years, they were carried wherever the Spaniards settled, and in the space of half a century, were established from the 25th degree of north latitude, to the 45th of south latitude. They seemed to suffer nothing from the change of climate, and from the very commencement were raised with the same facility as in Europe.

The naturalization of CATTLE presented difficulties of a more serious kind, which, however, were conquered by the admirable perseverance of the first colonists. The island of St. Domingo,

where these animals were first introduced, became a sort of nursery, where they multiplied prodigiously, and whence were drawn vast herds to stock the different parts of the mainland, the coast of Mexico, and the interior. Oviedo tells us, that, in spite of this immense exportation, herds of 4,000 cattle were very common in that island, only 27 years after its discovery. Herds even of 8,000, were sometimes to be met with; and, according to Acosta, in 1587 the exportation of hides from the island of St. Domingo, alone, amounted to 35,441. In the same year, were exported from the different parts of New Granada, 64,350. This was the sixty-fifth year from the conquest of Mexico, an event, previous to which the Spaniards had been engaged in nothing but war.

As soon as cattle were multiplied to such an extent as to become almost wild, it was discovered that a certain quantity of salt was indispensable in their food, and that, if they did not get this salt from the herbs, the water, or certain earths of a brackish taste, which exist in many countries, they became lean, the females were less fruitful, and the species rapidly degenerated. In those places where there is a sufficiency of salt, the inhabitants find an advantage in giving some to their cattle, as, besides its beneficial influence on their health, this practice accustoms them to come up at a fixed hour to the place where they are usually fed, and where they know they will find salt. If these regular calls be neglected, it is no wonder they soon disperse and become wild.

In Europe, where milk is regarded as a very important part of the produce of the dairy, the cow is milked, from the moment when it becomes capable of propagating its kind, until the time when it ceases to be so. This plan, constantly exercised on every individual during a long series of generations, has ended by producing important alterations in the species. The teats have become of immense size, and the milk continues to flow from them even when the calf is taken away from the mother. In Colombia, a train of circumstances, useless to mention, have contributed to produce very different results; but only a few generations are necessary for this animal, left in liberty, to return to her original organization. For the cow to preserve her milk, it is necessary, in Colombia, that the calf be with her the whole time, and be be able to suck. If it be taken away only for one night, nothing is gained by the milk which is collected during this interval; for as soon as the calf ceases to suck, the milk immediately dries up.

The ASS, in those provinces in which M. Roulin had opportunity to notice it, appears to have undergone only some slight alterations in its form and habits. In some places, where little care is taken of this animal, and where it is overworked, it is not unfrequently born deformed; but in none of the provinces visited by our author has it ever become savage.

The same observations do not hold good with respect to the HORSE. From the wild and independent life of the horse, a uniformity of color arises peculiar to the untamed species. The chesnut is not only the prevailing, but almost the only color of this animal.

The gait preferred in saddle-horses, is either an ambling or a stately gait. Pains are taken and kindness is employed, in training the animals to either of these motions that may be preferred. Whilst they are undergoing this system of discipline, they are not permitted to move in any other gait. After a certain time, the horses contract these motions habitually, and if they are of a beautiful form, they are let go in the forests to propagate their breed, as very few of them are ever gelded. From these result a race of horses in which the amble, among the full grown ones, is as natural as the trot among other horses. These are called *aguillillas*.

DOGS were transported into America, during the second voyage of Columbus; and it is worthy of remark, that in his first battle with the aborigines of St. Domingo, he had, in his little army, a pack of twenty blood-hounds. This animal was afterwards employed in the conquest of different parts of the continent, especially in Mexico, and New Grenada. The race is still preserved without apparent alteration, on the table-lands of Santa Fé, and is there used for hunting the stag. It displays, in that region, extreme ferocity, and employs the same mode of attack which formerly rendered it so dreadful to the native inhabitants. This consists in seizing the animal when in full career, under the lower part of the belly, and in overturning it by a sudden motion of the head, taking advantage of the moment when the whole weight is suspended upon the fore-legs. The weight of a stag thus thrown to the ground, is frequently six times that of the dog.

Certain dogs of a pure breed inherit, without instruction, the necessary instinct for the chase of the peccasy, (Peruvian hog,) in which they are often employed. The art of the dog consists in restraining his ardor, in never attacking any particular animal, but in holding the whole herd at bay, without permitting himself to be surrounded. One dog, the first time he is carried into the woods, attacks the herd in the most advantageous manner; another rushes indiscriminately upon the whole herd, and whatever may be his strength, he is devoured in an instant.

The species of SHEEP transplanted into America, is not the Merino, but two kinds, called in Spanish *lana basta y burda.*

The sheep propagates very well in temperate climates, and in no part shows any disposition to forsake the authority of man. In the burning climate of the plains it is maintained with more difficulty; but its existence there gives rise to an extremely curious phenomenon. The wool of the lamb grows almost like the wool produced in more temperate regions, with the single exception, that it requires a longer time to mature. When the animal is in the proper state to be sheared, the wool presents nothing remarkable in respect of firmness, and if it be then taken from the lamb, it commences growing again, and every thing proceeds just as among the sheep of more temperate countries. But if, in this warm climate, the shearing season is suffered to pass away, and the fleece left on the lamb, the wool thickens, becomes like felt, and finishes by detaching itself from the body, leaving under it not a new growth of wool ready to spring up, nor a naked and diseased skin, but a short, fine, shining, velvety nap, very similar to that of goats, reared in the same climates. On those spots where this nap or hair has once appeared, wool never again grows.

The GOAT, though its form is evidently that of a native of the mountains, accommodates itself

much better to the low and burning valleys, than to the elevated parts of the Cordilleras. Not being milked so often, it has not those large teats which render it so remarkable among us. In this animal, a change may be observed analogous to that which we noticed in the cow.

Birds.

Among the bird-tribe, very few changes have occurred. The DOMESTIC FOWLS present little or no difference from those of Europe. But in warm countries, and among the acclimated species, a remarkable anomaly presents itself. Chickens, whose parents have lived for a great number of generations, in a medium temperature, above 28°, (Reaumur,) are hatched with but little down upon them, lose that little very soon, and for more than two months have no feathers except on the wings.

Chickens not acclimated, (and twenty generations are not sufficient to acclimate them,) cherish their first down as if they needed it. How many years, asks our author, must have been required to have effected this very sensible change in their organization?

The common hen has thrived very well in most of the islands in which it was first introduced by the Spaniards. But in some higher regions, as at Cuzco, and throughout the whole adjacent valley, great difficulty was found at first in propagating it. By care and perseverance, however, some chickens were obtained. These were by no means fruitful, but their descendants have become extremely so, and at this day they propagate with the same facility as in our climates. The same phenomenon appears to have taken place with the GOOSE, which has only within a few years been introduced into Bogota. The PEACOCK, the SPECKLED-HEN,* and the PIGEON seem to have undergone no change. The first has even preserved the variety of colors for which it is distinguished in Europe.

Conclusions. Although the foregoing observations have not been made by the author for the support of any particular system, it seems to us that we may very naturally deduce the following inferences: First, that species must be acclimated as well as individuals. Second, that domestic animals, left to themselves, have a great tendency towards the organization of those of the same species which we observe in the savage state, and that a very few years sufficed to effect this transformation.

[The further contributions of the translator of the foregoing article, will be thankfully received. ED. FAR. REG.]

From the Agricultural Magazine.

AN ACCOUNT OF AN IMMENSE CHIMNEY, RECENTLY BUILT AT CARLISLE.

"The immense chimney attached to the new cotton factory, now being built for Messrs. Peter Dixon and Sons, in Shaddongate, had the last stone placed upon it on October 24, 1837. It is one of the highest buildings in England, being 305 feet from the ground; and for the purpose to which it is to be applied, is understood to be the highest erection in the world. It may be distinctly seen for many miles in all directions around Carlisle, and forms a beautiful object in the view of our city, from whichever quarter you approach it. The building is of the octangular form, and is built with brick, the angles being formed of stone. The base, which is built with fire-bricks, is 17 feet 8 inches in width inside, and the thickness of the wall at the foundation is 10 ft. It tapers upwards to a width, inside, of 6 ft. 3 in.; and on the outside 8 ft. 9 in. Near the top there is a cornice of stone, 7 ft. in depth, which projects 3 ft., and above this there are 8 ft. 3 in. of brickwork, surmounted by a coping stone one foot in thickness. The cornice gives a finished and classical appearance to the building; and the whole would be taken for some splendid national monument, rather than a mere conduit pipe for smoke. It is not a little creditable to Carlisle, that this magnificent work was entirely executed by a native of that city, a builder, a Mr. Richard Wright, who has completed it in the way to give the most entire satisfaction to every scientific man who has examined it. Considering its immensity, the work was completed in an incredible short period of time. The foundation stone was laid on Sep. 11, 1835, by P. Dixon, Esq.; the first brick was laid by Mr. Wright, on Sep. 17.; the last course of bricks, also by Mr. Wright, on Oct. 22, and the last coping stone on Oct. 25, 1836; thus completing the work in thirteen months. The erection was carried on from the inside, stages being erected as the work proceeded, and the workmen and materials being taken up in boxes prepared for the purpose, by a crab worked by four men; and it is gratifying to add that the whole was finished without any accident occurring to any individual engaged in it.

THE MILK SICKNESS, AND THE BOHAN UPAS OF THE WEST.

The mysterious disease which bears this name, is peculiar to the region west of the mountains, and prevails only in certain districts of that region. Many parts of Kentucky, Indiana, Illinois and Missouri, have been greatly afflicted by it, hundreds have died its victims, and some districts of country are almost uninhabitable on its account. The Kentucky legislature has long since offered a reward to any one who could ascertain the cause of this terrible disease, but all inquiries upon the subject have been hitherto unsuccessful. The St. Louis Bulletin, however, contains a letter on the subject, said to be from the pen of an intelligent gentleman, in which the cause of the disease is referred to a tree, the properties of which are described to be very similar to those attributed to the Bohan Upas of the East Indies. The letter, which will be found interesting, is subjoined:

Femme Osage Township.
St. Charles Co., Mo., Nov. 9, 1838.

Mr. Koch—Dear Sir—I herewith transmit to you one of the genuine apples of Sodom. It grew on a large Sodomite tree in Femme Osage bottom, in St. Charles county. The tree is nine feet thick, one hundred and forty feet high, and straight in the body, there being no limbs for forty six feet above the ground. In a fruitful year

* Pintada, or Guinea fowl?—ED.

it is estimated that it bears one-thousand bushels of fruit. The leaves resemble those of a pear tree, but are much larger and evergreen; the blossoms are similar to the tulip, and when in full bloom, it is considered the most grand, beautiful and imposing object in the vegetable kingdom. But it is of the most poisonous nature; its roots, bark, sap, leaves and fruit, are all destructive poisons. Its twigs and branches operate as a slow, malignant and incurable poison, of a peculiar quality, destructive of animals and man. It has been recently discovered, and satisfactorily tested, that the browsing upon the sprout about its root, is the cause of that mysterious disease, called the milk sickness.

The fruit, when full ripe, has an inviting appearance, but it soon takes a dry rot, and the inside becomes a poisonous and disagreeable dust. in appearance resembling Scotch snuff. Notwithstanding its noxious qualities, cattle and various other animals are fond of frequenting it and feeding on its leaves, and they frequently die in its vicinity. Numerous skeletons of animals may be found in the bottom, within a mile round, but when taken in small quantities, it terminates in lingering and uncontrollable milk sickness. Since the tree has been fenced in, no milk sickness has existed. The wood of the tree is as solid and heavy as lignum-vitæ or ebony, and from its similarity, some intelligent persons have conjectured that is the celebrated tree called the Bohan Upas in the East Indies. When any part of the green tree is lacerated, a peculiar gum exudes from the wound, like unto white native turpentine, which is esteemed one of the strongest poisons, and will blister and seriously injure and ulcerate the human body if applied externally.

It is thought by some persons that this tree might be advantageously used in the practice of medicine if its powerful medical qualities were properly understood, but its poison is so destructive that every person here is afraid to make any experiments with it. If the citizens of those parts of Illinois, Ohio and Kentucky, that are afflicted with the milk sickness, will make proper examination, I have no doubt that they will find somewhere in the sick district a solitary tree similar to the one I have described above, and if they will destroy or enclose the tree, they will effectually prevent the disease. Many marvellous stories are told in the neighborhood, but respecting many of them I am very incredulous; but the foregoing statement I have prepared from personal observation, and from information in which I could place implicit confidence. If you should desire further information respecting this tree, I will take pleasure in answering any inquiries directed to me by mail, to Missouri town, my nearest post office.

With great esteem,
Your obedient servant,

———.

IMPROVEMENT OF LAND BY MANURING WITH MARSH-MUD, MARSH-GRASS, SEA-WEEDS, SHELL BEDS, &c., &c.

[The following connected papers, which appeared in the American Farmer of 1831, are republished here, both on account of the interesting contents of the correspondence, and in the hope of drawing forth, from the same or other sources, additional and more recent facts, on any of the same subjects. In "Potomac," we recognize, by internal evidence, one who has since been a highly valued contributor to the pages of the Farmers' Register; and whose contributions exhibit proofs of the profit which he derived from this earlier correspondence, when a "novice" and a mere seeker of information. We know not who is the writer of "Corn-planter;" but if he is not already one of our contributors, his becoming so is much to be desired; and especially from him, or others, is wanting, and would be of great use to many readers, the fullest and most recent information on the use of marsh-mud, as manure.

It is astonishing that so little has been yet done, and so much less made generally known, in the use of marsh-mud as manure. It is true that hundreds of writers recommend the mud of ponds, ditches, marshes, &c. as ingredients for compost heaps, or for the foundation of, or for mixing with barn-yard manure; and very many speak, generally, but as from experience, of the profitable results thence derived. But still, there is an utter deficiency, so far as we are informed, of any precise and satisfactory statements or estimates, of the amount of profit, or of increased products, obtained from the application of any certain quantity of marsh-mud, or of expense in its use. And the few applications which we have known of, including some of our own, of the mud applied alone, have not produced such apparent increase of early product, or of fertility, as to encourage the repetition.

Still, reason and theoretical views would strongly recommend the very extensive use of marsh-mud, both for its great available quantity, its cheapness in application, and for the value of the fertilizing ingredients which it certainly contains, (and indeed mostly consists of,) and must give to the soil. A very simple and yet sure mode of analysis, (by fire,) which we have often used for this purpose, will prove to any experimenter, that about one half of the dry weight of all common tide-marsh-mud consists of vegetable matter; and that part, when dry, is so very light, that what serves to make half the weight, is probably nine-tenths of the entire bulk of any given quantity of the mud. All vegetable matter, finely broken down and much decomposed, as this is, would be supposed to be manure, and of a kind ready for speedy action; and if not so in this case, it cannot be for want of richness, or on account of the deficiency of the elements of food for plants in the mud; but because the vegetable matter therein is not in a state to serve as food for plants. This is the case with peat, which is almost entirely a vegetable substance, but of vegetable matters made

insoluble, and therefore incapable of acting as manure, and feeding growing plants. Yet peat may be rendered soluble, and made a valuable material for compost manure, by being mixed with and acted on by highly putrescent manure, by alkaline fluids, and by quick-lime. Now it is possible, that though our marsh-mud is very far from being incapable of rotting, still its being so long water-soaked may have taken out all the soluble parts, ready for immediate action; and that composting with other substances, as is recommended for peat, may be required to bring the balance of the mass into early and profitable use. Several things give countenance to this supposition. The only known cases of the marsh-mud being supposed profitable, were when it was used in mixture or union with other manures; or when it was from salt-marsh—the salt perhaps serving in some measure for the same purpose. In addition—and it is the most important circumstance—the readers of this journal may remember the French practice (stated in Puvis' Essay on Lime, vol. 3, Far. Reg.) of applying lime in quantities as small as 5 bushels to the acre, with profitable effects. But this lime was put in compost, with rich vegetable soil, which is much like marsh-mud in composition, and it was stated that the older the compost, the better its operation as manure. Now, as the lime could not grow stronger or richer by age, it may be inferred that it was the mass of vegetable matter, acted on slowly and gradually by this small leaven of quick-lime, which was improving in value, and which in fact constituted the greater strength of the compost as a fertilizer. If by any means, this enormous and inexhaustible supply of natural material can be profitably used as manure, it would be the greatest means for improvement, except calcareous manures, yet offered to the tide-water region. Nor would it be confined to that region; for others have rich alluvial and vegetable deposits, in swamps and in the bottoms of ponds, to which the same rules and practices would apply. And if the state government should attempt to aid agricultural improvement, there will be few subjects for experiment more worthy of being directed, and paid for, by the state, than the conversion of some portion of this widely spread and now unmixed evil and nuisance, to a source of fertility and profit, as manure for the neighboring lands.—Ed Far. Reg.]

From the American Farmer.

Westmoreland county, Va.
August 11, 1831,

Mr. Smith—I am engaged in making extensive experiments with marsh-mud, Indian banks, or partially decomposed oyster shells, which are found in great abundance on the margins of many of our creeks, and kelp or sea-weed, which is thrown in great quantities upon the shores of the Potomac, by almost every tide. These abundant and convenient resources for fertilizing our lands, have hitherto been almost totally neglected by the farmers in this part of the country; and in making my experiments I am entirely unaided by the results of the experience of others. In applying the marsh-mud, the plan recommended by Judge Johnson of South Carolina, in 11th vol. of the American Farmer, has been pursued, and I have no doubt will be successful. The partially decomposed oyster shells have been applied in the manner in which marl is used in different parts of the United States. In the application of the kelp I have experienced more difficulty, having been unable to find any practical treatises upon that subject. To my surprise, although this manure has been used with great effect as I have been informed, for many years, in different parts of Maryland, there is not a line to be found in the American Farmer upon this subject, with the exception of the communication from Thomas Griffin, Esq. of York Town, Virginia, contained in the first volume of that valuable work. A practical essay upon this subject, by some intelligent agriculturist who has used this manure extensively, would be of vast service to the farmers upon the sea-board, and upon the salt-water rivers, where this valuable "*weed*" may be obtained in almost inexhaustible quantities. I should be much gratified by information particularly upon the following points. What is the best season for applying the sea-weed? Is it most efficacious when applied in summer, winter, or spring? Should it be applied fresh as taken from the river, or after standing in heaps until partly decomposed? Is it true that wire grass is introduced by its use? Should it be turned in immediately, or left upon the surface until the earth is tilled for a crop? The plan which I am pursuing, is to distribute the weed regularly in the water furrows of an old cornfield, as soon as convenient after it is carted out, and to list immediately upon it, to protect it from the rays of the sun. I put from 70 to 100 loads, drawn by two yoke of oxen, upon an acre.

Since the beginning of the present year, I have kept a cart, a man and a woman, and two small boys who could do nothing in the field, constantly engaged in collecting and carting out manure of various kinds, and at this time, which is a season of comparative leisure with farmers, I employ an additional cart, and a few additional hands, and with my short experience I can confidently say that the labor thus employed is ten times more productive, than it would be in any other work upon the farm. I yesterday stood by for two hours where my carts were carrying kelp from the river shore, and in that short time twenty-one loads, averaging about 20 bushels, were carried out. The distance of course was short, and the kelp abundant, so that little time was lost in loading. I have little doubt that with the force exclusively devoted to this business, and with occasional assistance from the farm hands, I shall be able to manure at least one hundred acres annually. This may be startling to those who have paid little attention to the improvement of the earth, but it is not more incredible than the account given by Mr. Singleton of the Eastern Shore of Maryland, in the 2d vol. of the Farmer, of the great improvements effected upon his farm, with compara-

tively limited means. The accuracy of that account I was at one time disposed to question; I am now thoroughly convinced of its truth. You may find some valuable information upon this subject of kelp as a manure, in the 1st vol. of the New Edinburgh Encyclopædia, Art. Agriculture, page 270, by transferring which to your columns, you will probably benefit your readers.

When my experiments are sufficiently matured to enable me to afford any useful information to the public, I may trouble you with a communication under my proper name; but for the present, being merely seeking information from others, I subscribe myself your obedient servant,

POTOMAC.

SEA-WARE, MARSH-MUD, ETC.

Talbot county, Eastern Shore, Md.
August 30, 1831.

Mr. Smith—Sea-ware is thrown on our shores in considerable quantities, and we have had numerous banks of partially decomposed oyster-shells, but they are now nearly exhausted. Many have made their lands rich by the application of these materials, and the more modern ones—marsh-mud, and the heads of creeks. It may be encouraging to "Potomac," and such of his neighbors as have the good fortune to possess these precious treasures, to know that the annals of this county afford instances of more rapid improvement from them, aided by well managed farm-yards, than that mentioned by the late Mr. Singleton from shell-marl. That nothing has been written on the subject in this quarter is owing to the general knowledge of their value:—the time for experiments in regard to them has gone by. They have been used extensively for thirty years—partially, much longer.

One good dressing of Indian bank shells is *sufficient.* The sea weed may be applied with advantage to every new crop:—they act together better than separately—and better still combined with stable or farm-yard manure. But it cannot be expected that all this can be effected, to any considerable extent, in one year—if done in the regular course of cultivation it will be sufficient. That is, give a dressing of marsh one year, and one of shells the next time it is cultivated—or the reverse. My experience and observation lead me to recommend that the shells be dropped on every fourth or fifth *land*, or ridge, as near to each other as convenient to the carter; that is—when his team arrives within a few feet of the load just deposited let him tilt his cart. The same process to be observed in dropping the sea-ware. This valuable article acts well on all crops, and at all seasons—the sooner it is turned in the better: it loses much of its virtue by exposure—but it is a common practice to drop it during the summer on land intended for corn next year, where it lies until it is time to *list.* It is excellent for fallow. When thrown on shore by a favorable wind the most pressing jobs are postponed until it is secured, either by taking it to the field where wanted, or by heaping it a few feet above high-water-mark, to prevent its being carried off by the ebb tides. It is useless, and double labor, to put it in large heaps—if heaped in the field, in large bulks, nothing will grow on the spot it occupied for several years:—indeed a single cart load, if it lies a few months, deposits rather too much salt—to obviate this one of my neighbors distributes it in half loads. No instance is known of its introducing wire-grass or any other pest.

Marsh-mud and the heads of coves are now extensively used. Unexpected quantities and qualities of manure are frequently found:—after penetrating through a stratum of rich salted alluvial soil, well rotted marsh, emitting a strong stench, is often found. These *compost-beds*, from *six to ten feet* deep, of the best *materials* ready *to our hands*, are invaluable. Some of our landholders, who let land on shares, are so sensible of the value of these resources that they furnish a cart, team and carter, (the tenant finding food,) to be employed on them exclusively all the year. Marsh can be got out in the dead of winter—it makes an excellent dressing for the farm-yard. Oyster-shells, collected from bars by men who make a business of it, in large quantities, are sold at 1½ to three cents per bushel to farmers, who burn them in kilns made of pine logs. The lime, and half burnt shells, are spread with shovels from the cart tail, at the rate of 150 to 200 bushels per acre, just before or after planting corn—or before seeding wheat.

Indian banks should be dug with grubbing hoes, or (if the ground will admit) ploughed up, and *shovels* used in loading. Iron pronged forks suit the sea-weed, *spades* and shovels the heads of coves and marshes. From two to five carts should be run, so that the hands employed to load may have constant work. *Single* teams are preferred.

I am no *essayist;* but hope something useful may be found in the above.

CORNPLANTER.

SEA-WEED, ETC.—MANURE.

Westmoreland county, Va.
Sept. 17, 1831.

Mr. Smith—I have to return my thanks to your correspondent, "Cornplanter," for the prompt and obliging manner in which he has responded to the inquiries made by me in my last communication. I am much instructed, and encouraged in the course which I had determined to pursue by the facts which he has disclosed. But I am a young and inexperienced farmer; and most of my time, moreover, being devoted to public and professional pursuits, I have but little opportunity, except in occasional intervals of leisure, of attending to the practical details of agriculture, or of acquiring by personal observation that minute knowledge, which is so essential to successful husbandry. Your correspondent will, I hope, therefore, excuse me, when I ask, not only for my own instruction, but also for the benefit of some of my neighbors, who are equally uninformed, and have, moreover, inveterate prejudices to subdue, that he will favor the public with another essay, in which more detailed information may be given. I have, myself, not the least doubt of the accuracy of the statement that there are instances of more rapid improvement on the Eastern Shore of Maryland, from the use of sea-weed, marsh mud and Indian banks, than that afforded on the farm of the late Mr. Singleton, from shell marl. But there is no subject, on which there is so great

a disposition to be incredulous, as in relation to agricultural improvements. And it is owing, in a great measure, to this very incredulity, that whilst improvement in the mechanic arts, and in the liberal sciences, and indeed in almost every other department of life, is rapidly advancing, agriculture, the most indispensable of all arts, is in many parts of the country completely stationary. As an instance of this incredulity, I may state the fact, that when I commenced digging in the marshes for manure, I was regarded by my neighbors as a visionary enthusiast, equally as mad as one who should seek for perpetual motion, or the philosopher's stone. The negroes were amazed; the overseer expressed serious apprehensions that the land would be *killed;* and one of the lights of the neighborhood in agriculture, completely confirmed his fears, by telling him that *he* had tried it, and he had enough "dead land" already, without attempting to "kill any more." It was in vain that I quoted the high authority of the American Farmer, and Judge Johnson; nothing could convince them of the efficacy of marsh-mud. I had the satisfaction, however, in the course of about two months, of seeing prejudice and incredulity completely subdued. Upon visiting my farm, I was met by the overseer with a smilling countenance, and informed that he was beginning to be convinced that the mud might be of some service; for the weeds were much higher upon the land where the mud had been put, than upon that adjacent to it, which was originally much better. And upon visiting it, a few days ago, I found him entirely convinced by a thick growth of crab grass, upon the land covered with the "marsh," whilst the surrounding vegetation was much less luxuriant.

But to return from this digression; your correspondent may remove the doubts that are now entertained, as to the practicability of manuring on an extensive scale, and perhaps stimulate to exertion many who are slumbering in indolence by stating the extent of the improvement effected upon a few particular farms, by the use of the means referred to; the condition and quality of the soil before the improving process was commenced; the amount of labor and capital expended; the crops made upon the land formerly, compared with its present productions; and whether the use of these means is supposed to have had any *peculiar* effect in adapting the soil to the growth of the beautiful white wheat for which the Eastern Shore of Maryland is so justly celebrated. This information in the community in which he resides may seem entirely unimportant, but he may be assured that to a large portion of Eastern Virginia, it is calculated to be of vast service. We have here a soil originally fertile, but much impoverished by a long course of barbarous cultivation. The means of resuscitating are at hand, if the public attention were only turned to them. And no greater service could be rendered to the cause of agriculture, than to convince the farmers in this part of the country of the natural advantages which they possess. They would thus be urged, if not by necessity, yet by reason, to exertion; with the hope not only of securing a competence, but of accumulating wealth, and by the desire which the loftier considerations of patriotism might inspire, of improving, fertilizing, and adorning their native land.

I fear that I have trespassed too far already upon the politeness of your correspondent, but I must ask information on one other subject. Can the "rotted marsh" found in the natural "compost beds" of which he speaks, be applied with safety or advantage immediately to a growing crop? Or does it require exposure to the atmosphere before it is fit for application? I am induced to make this inquiry because, in pursuing the instructions of Judge Johnson, in relation to marsh mud, I had applied a quantity of this "compost" (of which I have inexhaustible beds) early in the summer to land which I intended to *fallow* for wheat, and I was surprised to find, contrary to my expectations, that the vegetation was greatly advanced, almost immediately upon its application, and at this time the land exhibits unequivocal indications of very great improvement. I was led to infer from this circumstance, that Judge Johnson's instructions might have reference to a subject entirely different; and reasoning from analogy I concluded that this manure might be beneficial, when applied fresh to growing crops. But all arguments from analogy are more or less fallacious, and I should be much better satisfied with the experience of your practical correspondent.

POTOMAC.

MARSH-MUD, ETC.

Talbot county, Eastern Shore, Md.
October 12, 1831.

Mr. Smith—I do not know how I can more satisfactorily answer the polite call of "Potomac" than by giving some account of improvements made on one of the farms alluded to in my last, by the application of bank-shells, sea-ware, marsh-mud, and heads of creeks, aided by a well conducted farm-yard. These have been so remarkable as to have had a beneficial effect in this county, and I think such examples should be made known as widely as possible for general benefit.

I select this farm, *Emerson's Point*, in particular, because no one can pretend that *capital* had any agency in restoring its fertility. It lies near the mouth of Mile's river, emptying into the Eastern-branch of the Chesapeake bay, and contains two hundred and seventy-five acres. It was purchased by the father of the present proprietor, Mr. Wm. Hambleton, about the year 1790, at 40s. Md. currency—5.33 dollars, per acre,—and was occupied by a tenant, as it had been for two or three generations, until the year 1808, when the proprietor married and settled on it. The soil is a stiff yellow clay—growth chiefly pine; it was worn down to the lowest state of sterility: a considerable portion had been suffered to run into pine thickets, where the corn ridges are still visible; and it was nearly destitute of the buildings indispensable to a farmer. But the means of improvement were at hand: the proprietor knew their value, and lost no time in availing himself of them. He had *no capital* of any kind: but he was young, skilful and industrious. Having no slaves he commenced with two hired hands, and, occasionally, two boys, two horses and a yoke of oxen. The arable land was one hundred and twenty-nine acres, but his operations, for many years, were confined to ninety-nine acres—a poor

field of thirty acres, distant from his resources, he left idle, unenclosed. He laid off these ninety-nine acres as follows :—two fields of 45 each, two lots, 5 and 1½, orchard and garden 2½ acres. For his first crop, to make a *push*, he selected his best land, including the old tobacco ground near the house. From forty-five bushels of wheat seeded Sept. 1807, he got a crop of one hundred and fifteen, less than three for one. In the spring of 1808 he planted corn on one half of his other field, after getting out a considerable quantity of bank-shells and sea-ware, and left the other half, *under the same enclosure*, for fallow, to be manured as opportunity might permit during the summer—and this plan he continued to follow about eight years, and would have continued it longer but for the inconvenience arising from the want of *pasture*. It is to be regretted that he did not keep an exact record of all his crops: however, he assures me that the following may be depended on as very near the truth. His first crop of corn was eighty-five barrels, his second thirty-five, of which twenty were short corn. (It may be well to mention that a barrel of corn is five bushels of *grain*, or ten bushels of *ears*.) His second crop of wheat was two hundred and fifty bushels from 45 of seed, being five and a half for one. His third crop of 350, nearly eight for one. Fourth 500, fifth 700—and so on, increasing every year, until, in the year 1816, having altered the arrangement of his fields from two of forty-five to three of thirty acres each, he reaped from sixty-seven and a half of seed a thousand bushels of prime wheat,—one half on corn land—the other fallow. This crop he had the good fortune to sell at two dollars 91 cents per bushel, and the good sense, although not pressed, to apply the proceeds to the payment of debts necessarily contracted in the erection of buildings, among others an excellent barn, and the purchase of three or four boys; and various expenses incident to a new establishment and growing family. It should be remarked also, that, until the end of the year 1818, his land was burdened with a third of the estimated rent, as dower.

No memorandum can be found of his crops for the three succeeding years, nor does he recollect the amount; but they were not so great as that just stated. He failed in one crop from defective seed which he purchased.

In 1820 he reaped eleven hundred and twenty-seven bushels from ninety of seed, thirty of which was sown on the out-field before mentioned. This, and several other crops to be noticed, he has on record. In 1823 his wheat crop from seventy-two was one thousand and thirty-nine bushels—nearly fourteen and a half for one.

In 1830, from 88 of seed he reaped fourteen hundred and ninety-seven bushels of wheat, 17 for one—one half from corn-land, the other fallow—thirty acres each—the fallow yielded *twenty-five for one*—see some account of this crop in the Farmer about July 1830.

Last year, being much occupied in repairing and building, he seeded only fifty bushels of wheat, which produced a crop of six hundred and twenty-eight bushels. All this was on corn-land except a lot of five acres, which, from seven and a half of seed, gave one hundred and fifty-seven bushels, nearly *twenty-one for one*. I have confined myself principally to an account of his wheat crops, because he could not inform me with so much accuracy the amount of his corn crops—they were generally good, seldom fallowing below three barrels to the thousand and frequently reaching four. His greatest crop of corn was in 1827, from two of his thirty acre fields, five hundred and twenty barrels.

Last year he bought five thousand bushels of oyster shells, at the cost of one hundred dollars—burnt and spread them as far as they went, at the rate of 200 bushels per acre just before planting corn, on the out-field, which got also a dressing of farm-yard manure. The crop of corn, just gathered, is fair—few in the county better.

His shell-banks giving out and the drifts of sea-ware being less abundant than formerly, about eight years ago he commenced the use of marsh, and heads of creeks, of which he thinks favorably, paying strict attention, as usual, to the farm-yard and compost heaps. He has one now, containing upwards of a thousand *skates* or double-heads, taken a few weeks ago in his seine—from this he calculates on a thousand cart loads of manure for his corn-land next spring. From their livers he extracted seventy-three gallons of oil. From experiments made last year with similar oil, he is of opinion that it is a remedy against the worm, so destructive to the peach tree. He does not spread sea-ware so thick as I recommended in my last, on account of the difficulty of ploughing in—nor would he recommend the shells to be put so near—intervals of five lands should be left: between marsh, &c. three. I readily yield to his superior judgment.

For fourteen or fifteen years past he has made great use of the sickle—much of his wheat being too rank for the cradle. He ploughs about four inches deep, and cannot be induced to go deeper—in good land sows a bushel and a half to the acre, in poor one bushel; breaks his fallow ground about the middle of June—cross ploughs soon after harvest—rolls and harrows—and, if likely to be grassy, gives it a third ploughing—puts in with the plough, very shoal, in narrow ridges, keeping his manure near the surface. I consulted him respecting the question of Potomac: he is of opinion that no danger is to be apprehended from the application of rotten marsh to growing crops, if put on in reasonable quantities.

It will be observed that this farm, notwithstanding its rapid improvement, has been *severely cropped*,—present gain, from necessity, being the main object. The proprietor was not insensible of the value of clover as an improving crop; but he could not let it remain long enough to be of much use to the land. He never cut but one field crop of it, 1825, upwards of fifty tons from thirty acres. Hereafter, having got his out-field in pretty good order, he will adopt the four-field system, cutting one field of clover every year. His regular force is five able hands, with some small boys, —he runs three ox and two horse-carts—has never kept an overseer, and for many years labored daily. I have not thought it necessary to state his root crops—the produce of his hog-pen, &c., supposing that his principal crops would clearly show the progress of improvement.

There are three other farms within a few miles of Emerson's Point, on which wonderful improvements have lately been made. I mean those of Colonel John Tilghman, Mr. Edward N. Ham-

bleton, and of Doctor John Barnett. I hope they will favor the public, through the columns of your useful paper, with an account of their management, crops, &c. There are other farms in the same neighborhood which deserve honorable notice and minute description; in particular, those of Mr. Rigby Hopkins, Major Wm. Caulk, Mr. Joseph Harrison, and Mr. Stephen Harrison, improved, principally, by the use of *shell-lime*.

CORNPLANTER.

From the Lexington Gazette.

AGRICULTURAL SHOW AND FAIR OF THE AGRICULTURAL SOCIETY OF ROCKBRIDGE.

October 11*th*, 1838.

The society upon being called to order, by the president,—Professor GEO. D. ARMSRONG, of Washington College, delivered the annual address.

The premiums were awarded as follows:

For the best stud colt under 4 and over 2 years old, to Jno. McKamy of Augusta.

For the best brood mare, to James Johnson.

For the best filly, to Saml. McD. Reid.

For the best bull, to A. T. Barclay.

For the best milch cow, to William Moffat.

For the best heifer, to Thos. Wilson.

For the best bull calf, to Thomas Wilson.

For the best boar—A premium was awarded to two of equal merit, viz.: to Thomas Wilson and A. T. Barclay.

For the two best rams, to Jno. Jordan and A. T. Barclay.

For the two best ewes, to Jno. Jordan and A. T. Barclay.

For the handsomest and best counterpane, to Mrs. R. Grigsby.

For the best piece of sheeting, to Miss Johnston.

For the best piece of table linen, to Miss E. Finley.

For the best pair of blankets, to Mrs. Jno. Jordan.

For the best man's saddle, to Jno. T. Figgat.

For the best specimen of ploughing, to Wm. Moffett.

The committee recommend to the directors, to award premiums for counterpanes to Miss Grigsby and Miss Finley—for hearth-rug, to Miss Christian—for a piece of flannel, to Miss Alexander—for a cheese, to Miss Grigsby.

On motion of Samuel McD. Reid, it was resolved, That hereafter, no premium will be awarded to any person who shall not have been a member of society more than six months previous to the awarding of such premium.

On motion of C. P. Dorman, it was resolved, That the president and directors of the Rockbridge Agricultural Society, prepare, and address a memorial, to the general assembly of Virginia, on behalf of this society, asking its incorporation, and praying the aid of the state to the cause of agriculture, and agricultural societies.

On motion of John F. Caruthers, it was resolved that the corresponding secretary communicate the foregoing resolution, to the several agricultural societies of Virginia, and solicit their immediate and active co-operation.

On motion of C. P. Dorman, it was unanimously resolved, That the thanks of this society are due to Professor GEO. D. ARMSTRONG, for the able and appropriate address this day delivered by him, and that a committee be appointed to communicate our sense of its merit, with a request that a copy be furnished for publication.

Committee appointed by the president under the foregoing resolution—C. P. Dorman and A. T. Barclay.

The society then proceeded to the election of officers for the ensuing year, when

Maj. John Alexander was elected president.

Thos. Wilson, vice president.

J. T. L. Preston, corresponding secretary.

A. T. Barclay, recording sec'ry.

Henry B. Jones,
Matthew White, & } *Treasurers.*
Robt. McCluer,

And Jos. Cloyd, Wm. Moffit, R. R. Barton, Alfred Leyburn, Saml. McD. Reid, Jno. F. Caruthers, C. P. Dorman, Saml. Wilson, Jonathan Brooks, Wm. Houston, and Wm. Inglis, *Directors.*

Resolved, That the next annual meeting of this society be held on the 3d Thursday of October next, at Fancy Hill.

Adjourned,

SAML. WILLSON, Pres't.

Teste,

A. T. BARCLAY, Sec'ry.

From the Salem Observer.

THE SNOW OWL.

Taking a stroll among the market wagons that crowded our streets, on Wednesday, laden with poultry and other agricultural products, we noticed in one of them, a living specimen of the snow owl, which was captured in Topsfield. Every season, between the months of November and February, several of these beautiful birds are seen hovering around—always exciting a considerable degree of interest; their movements are generally so closely watched, that not a few of them are taken by the lovers of the chase and others.

They are inhabitants of the coldest and most dreary regions in the northern hemisphere, being constantly found in Iceland, Norway, Lapland, and the country adjoining Hudson's Bay. In the Atlantic states they are merely a winter visiter, and in their migrations wander along the sea coast as far as Florida, sometimes stretching interiorly, as they are met with in Ohio and Tennessee, and have been seen in the vicinity of the Red and Arkansas rivers. In Massachusetts and Maine they are more abundant than in any other part of the United States.

To protect this bird from the external cold to which it is exposed, especially in its native haunts, nature has bountifully provided it with a complete encasement of the most soft, warm, and elastic plumage beneath the outer covering of feathers, and so closely matted together that it is difficult to penetrate to the skin.

Its short and curved bill is nearly hid by the mass of feathers that cover the face; the feet are covered with a long, thick hair-like plumage, resembling very much those of a dog, the claws, which are curved, black and sharp, only being vi-

sible; the eyes are deep sunk under projecting eyebrows; and are of a bright yellow color; the general color of the body is white, and usually more or less marked with spots of pale brown, according to the age or sex of the individual.

AN ALLIGATOR IN NEW YORK.

The New York Sun says that a stonecutter employed in a shantee near the corner of Seventh street and avenue C, was on Thursday breaking the ice in a pond in a vacant lot in that neighborhood, when he was suddenly and not very agreeably surprised. No sooner had he made a hole than out jumped *a large alligator!* He raised an alarm and the animal was forthwith attacked and despatched without mercy. He measured from head to tail seven feet ten inches. The Sun says that one of these animals was picked up in the East river last July. But how they came there, or for what purpose, no one can tell.

From the Journal of the Franklin Institute.

ON THE PART WHICH THE SOIL ACTS IN THE PROCESS OF VEGETATION. MEMOIR READ AT THE ACADEMY OF SCIENCES, BY J. PELLETIER.

Translated from the Journal de Pharmacie, for the Journal of the Franklin Institute, by J. Griscom.

The ground is the support and nurse of plants; in its bosom, by means of roots, they seek for and find a portion of their nourishment. But to this truth, so simple and obvious, are attached questions of a complicated nature, and of the highest interest to physiology and agriculture. With one, among others, I have been particularly arrested, and it has been the object of my meditations. Before I enter upon it, permit me to bring into view some facts which appear to be necessary to the discussion of it.

The earth is not an elementary substance. Its exterior bed, the residence of plants, is formed of various metallic oxides, silica, alumina, lime, to which are often joined magnesia and the oxide of iron. It contains, moreover, the detritus of organic matters which had before possessed life and existence. Thus constituted, and under the influence of air, water and imponderable fluids, the earth is eminently fit for the development of germs deposited in its bosom, and to the growth of the vegetables which flourish upon it.

The necessity of the presence of organic matter, to constitute a soil, endowed in the highest degree with vegetative force, cannot be considered doubtful. In vain did Tull, in 1773, attempt to maintain that distinct earthy particles formed the sole nourishment of the plant. This theory was overturned by the positive experiments of Duhamel who had at first embraced it. Nevertheless, if it is certain that the presence of organic matter is a condition of fertility, we may still ask whether it is so *essential* a condition—such a *sine qua non*,—that a plant cannot vegetate in a soil totally deprived of organic matter, particulary if other circumstances, such as the presence of water and carbonic acid, be united with it.

Numerous experiments have been made to resolve this question. Many of them are contradictory. The greater portion, from the high interest which they involve, ought to be discussed and repeated with care. But another question not less important, and which I think ought to be first ascertained, is this: *What influence have soils themselves in the act of vegetation?* To this question I at present confine myself.

A vegetable soil, in its normal state, must be considered a mixture of various earths, that is, of metallic oxides.

Every soil devoted to agriculture, is in general, says Chaptal, formed of a mixture of silica, lime and alumina, and in support of this assertion he cites various analyses.*

Davy confirms this statement in his Agricultural Chemistry, and, in fact, not a single instance of a fertile soil has occurred, which consisted of only one earth, or even of two, such as lime and silex, silex and alumina, alumina and lime.

In another passage in his *Chimie Agricole*, Chaptal expresses himself thus:

"A mixture of lime, silex and alumina forms the basis of a good soil; but that it may possess all the desirable qualities of good land, these ingredients must exist in certain proportions, which analyses of the best soil can only establish.

If we consult the analysis of the most fertile soils, we find that fertility diminishes in proportion to the predominance of either of these principal earths, and that it becomes almost null when the mixture has the properties of only one of them."

Complexity of composition is therefore, in general, a condition of fertility in a vegetable soil. The loose earth which we find in valleys arising from the decomposition of primitive rocks, makes generally an excellent soil. Now we know that granite, composed of quartz, feldspar and mica, and frequently amphibole, must yield by its composition, a soil containing silica, lime, alumina and a little magnesia and sometimes potash. Soils originating, on the contrary, from the decomposition of more simple rocks, siliceous limestone, for example, are lighter, and suitable only for a limited number of plants; they require, says Chaptal, to

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* A very fertile soil in Sweden was found by Bergman to consist of:

Coarse Silex,	30 }	56
Silica,	26 }	
Alumina,		14
Carbonate of Lime,		30
		100

A fertile soil in Middlesex gave Davy—Siliceous Sand 3-5; the remaining 2-5 consisted of

Carbonate of Lime,	28
Silica,	32
Alumina,	39

Analysis of a fertile soil in Touraine:

Sand,	49
Silica,	16
Alumina,	10
Carbonate of Lime,	25
	100

A very fertile compost, formed by Tillet consisted of clay 3-8, pulverised lime-stone 3-8, sand 2-8, corresponding to

Course Silex,	25
Silica,	21
Alumina,	16.50
Carbonate of Lime,	37.50
	100

be enriched, and are valuable only in moist climates. Land originating in the decomposition of trap, basalt and other rocks of complicated elements, possess, on the contrary, great natural fertility.

"Rivers," he further adds, "receive in their courses other streams whose mud is mingled with its own, and it often happens that the united sediment of two rivers possesses greater fertility than that of either separately."

This then appears to be an established fact, that a soil (independently of organic matter) is the more fertile as its composition is more heterogeneous.

If we seek for an explanation of this fact, we find in authors only vague opinions and doubts; the greater number merely state the facts without attemptiug an explanation.

Agricultural chemists, who indulge more in theory, appear to regard the cause of fertility as dependent on the physical character of the soil rather than on its chemical constitution. Thus Davy having observed that different soils attract moisture with different degrees of energy, and having discovered, as he believed, that the most hygrometric soils were the most fertile, he ascribes their superior fertility chiefly to this property. But Davy has not proved that the hygrometric force of a soil bears any given relation to its composition.

If this attraction of moisture were the principal cause of fertility (abating the influence of manures) we perceive no necessity for the combination of the three earths in the constitution of a soil of the first quality. Indeed a certain quantity of alumina in a soil otherwise entirely siliceous, or entirely calcareous, a certain proportion between the adhesive and the loose or sandy portions, would be sufficient to confer this hygroscopic quality, and of course the fertility of the soil. But we have nothing to confirm this supposition.

The hygroscopic quality of a ternary soil may then be considered as an *element* of fertility, but only a secondary element, subordinate to its chemical composition.

The property of becoming more or less heated by the rays of the sun, which appeared to Davy to hold a relation to the fertility of different soils, appears to me to be also a secondary cause. In the cases referred to by him there was a mixture of black mould, and he did not sufficiently consider its fertilizing action as a manure upon the soil.

To me, it appears evident, that the mixture of the various earths which compose a soil, acts upon vegetation and determines its fertility *by an electro-chemical force*, whose action has been clearly recognized in other circumstances, but not yet brought into view in the case now under consideration. In the first place, let us observe, that it is a fact, though the truth may have escaped observers, or rather, it has not yet been brought under a formula, that the silica, alumina and lime which enter into a good vegetable soil, must not be combined with each other, but simply mixed, the lime being in the state of a carbonate. A triple silicate of lime or alumina, in which the silex, lime and alumina should be in the proportions which constitute the best arable land, could not, even if thoroughly divided, furnish a soil essentially adapted to vegetation. If, in a fertile soil, composed of a mixture of lime, alumina and silica, a combination between these three oxides should begin to take place, the ground would become cold and steril. Now, it is certain, that in a mixture of these three ingredients, a force does exist which tends to combine them. The silica and alumina are, in relation to the lime, electro-negative bodies, and in their presence the lime must acquire a contrary electricity. According as external or mechanical movements of the soil, or other foreign causes, shall bring these molecules within greater or less distances from each other, and group them in various ways, electrical piles will be established, discharges will take place, producing various tensions, and the earth will thus, if we may use the term, become animated. The electric fluid which pervades it will excite the stomata of the radical fibrils, determine the play of the organs, and the absorption of the fluids requisite to the nourishment of the plant. The radical fibrils, and the capillary roots impregnated with moisture, will become so many electrical conductors, engaged in transmitting electricity, certainly as necessary to life as light and caloric.

The merit of a theory is, that it accounts for observed facts, enables us to foresee what will take place under particular circumstances likely to happen, and indicates the considerations which it may be desirable to bring about with a view to useful results.

Let us inquire whether the theory now presented, fulfils these conditions:

Suppose a chalky soil. To improve it, we add argillaceous marl; i. e. to the lime which predominates we add silica and alumina. *To the positive element which we found alone, we add the negative elements which we found deficient.*

Will it here be said, that "chalk is so compact that the roots cannot penetrate it, or so split up that water passes through it like a riddle, and that the marling is simply designed to change this physical condition?*

But, if the object was merely to divide the chalk, in order to change its physical condition, a calcareous sand would accomplish this object, and yet it never came into the head of an agriculturist to improve his chalk by limestone, while Gordan de Saint-Memin produced a magnificent vegetation by a mixture of chalk with heath sand.

In a piece of ground belonging to Chaptal, the soil was clayey and rather barren; below was a layer of black earth. Chaptal went to work empirically, dug up the ground and mixed the two beds together. Contrary to his expectations, the sterility was increased. It was not till the fifth year that the ground acquired a common degree of fertility, that is, when all the iron had passed to the state of peroxide, and the land, black as it was, had become of a deep, bright yellow. Chaptal asks, if, in this case, the black oxide is injurious to vegetation, either by itself, or in reference to the oxygen.

In our theory, the fact explains itself, and might have been foreseen: the black oxides of iron (fer oxidule d' Haüy) is a combination of protoxide and sesquioxide of iron, a substance *indifferent* in relation to silica and alumina. Exposed to the air, the combination is destroyed, the iron passes to the state of peroxide, susceptible of union with silica and alumina. Yet, under such circumstances, it was not worth while to mingle the two

* G. Dict. d'Agriculture, article *Craie*.

beds, since five years were lost in attaining a common degree of fertility.

The theory which we have adopted, is applicable, likewise, in the happiest manner, to the operation called marling. Marl is not a simple mixture of silica and alumina with more or less of carbonate of lime. Its base is argillaceous and calcareous silicates; some mineralogists consider it even as an oryctognosaical species.* It is on this account that plants cannot vegetate in marl which has been long exposed to the air, even when the silica, alumina and lime are in the proportions which form good arable land. By exposure to the air, carbonic acid *destroys the combination* which existed between the earths, and it is then, and then only, that marl will enrich the soil. In this case, if the negative element prevails, as in the case of argillaceous marls, it becomes excellent for calcareous soils; and marls called calcareous are in their turn advantageous for argillo-sandy land.

It has been remarked, that the alkaline and earthy salts, which, in a certain quantity, injure vegetation, produce a good effect when employed in small doses. Chemists and farmers have sought to explain this action of saline compounds. Some have thought that certain salts were good for plants, as some are for animals—that salts, and even earths, formed part of the food of vegetables; others, on the contrary, that they act principally as stimulants to vegetation. Without denying that earthy substances may enter into the constitution of a vegetable, to unite and give strength to the parts that are to support the organs, like phosphate of lime in the bones of quadrupeds, I may remark, that with a few exceptions, the presence of any salt is not absolutely necessary to vegetation. Thus, for example, borage and lettuce, whose extracts contain much nitre when they grow in highly manured soils, do not contain any sensible portion of it when cultivated without dung. I therefore rather incline to the opinion of physiologists, who think with M. Decandolle, that salts act as excitants or stimulants. But, what is the meaning of excitation? At the present day, science no longer admits of those vague explanations which consist of nothing but words. I understand by excitation, the eminent property of conducting electricity which salts communicate to water. It is in this manner, as it appears to me, that nitrate of potash acts, in the prodigious energy which it gives to vegetation. It is probably in this way that sulphate of lime acts; that is to say, by rendering the water a better conductor, though, in this case, the effects appear to me to be complicated, and to be worthy of direct experiment.

Thus far, for greater simplicity, we have considered lime as free, in speaking of the mixture of silica, alumina, and lime, which constitute a soil: now the lime is in the state of carbonate, but it does not, in that state, cease to be an electro-positive element in relation to silica and alumina. This circumstance allows us to explain an important vegeto-physiological fact. The carbon in vegetables is produced mostly, if not entirely, by the decomposition of the carbonic acid which they absorb not only from the air, but from the ground: such is the opinion of the celebrated Decandolle. This carbonic acid, furnished by the ground, appears to enter into the vegetable at the moment of its liberation, probably dissolved in the water which the soil contains. It is absorbed by the spongioles of the radicules; it ascends with the sap, urged forward as by a *vis à tergo*. But how is this carbonic acid produced? In certain manured soils, and in superficial portions of the earth, penetrated by the air, we may conceive it to be formed by the re-action of oxygen upon the carbon of organic detritus; but at those great depths which are attained by the roots of oaks and cedars of a hundred years old, how can the carbonic acid be developed? How can the oxygen and organic matter penetrate to such depths? In our theory there is no difficulty. Carbonic acid comes from the lime, on which the silica and alumina act slowly but continuously to form silicates.*

Thus, then, at certain depths, and under influences but little understood, silica would decompose carbonate of lime, while at the surface of the earth, and under the influence of exterior agents, the silicates would be decomposed by carbonic acid produced by the reaction of the oxygen of the air on organic detritus—an admirable and providential rotation, which re-establishes the equilibrium, and incessantly tends to the rejuvenescence of nature.

The last corollary of my theory—the decomposition of silicates by exterior agents, and particularly by carbonic acid, cannot be called in question. It has been established by M. Becquerel, under circumstances in which the force of cohesion might seem to present a serious obstacle. I allude to the decomposition of the feldspar of granite, and the formation of kaolin. The analogy is here so strong that I must render the homage of my first conception to the distinguished academician I have just cited.

The fact of the decomposition of carbonate of lime by silica in the interior of the earth is equally supported by experiment and observation. And, first, if, in proceeding to the analysis of a vegetable soil, when the coarser siliceous sand has been separated by agitation and deposition, and the carbonate of lime has been removed by weak acids, we examine the finer terrene substance which has resisted the weak acids, we find that it is not alumina, as Chaptal indicates, nor silica, as is stated in various works, but that it consists principally of veritable silicates of lime, of alumina, and of oxide of iron.

Still, it may be objected that these silicates are anterior to all vegetation; that to prove their recent formation and daily production, requires direct experiments. These direct experiments are among the objects which I wish to undertake. They require much time. But to prove truth, are we to depend solely upon new experiments

* Brochant's Mineralogy.

* Animal manures may contribute to the decomposition of silicates, not only by the carbonic acid which they form by absorbing oxygen from the air, but in producing such substances as the FAT ACIDS, which have a tendency to unite with lime and to eliminate the silica which is combined with it. M. Raspail, whose talents we are glad to acknowledge, without sharing in all his scientific opinions, appears to us to have explained the siliceous petrefactions that are found in chalk, in a very happy manner by the action of animals entombed in siliceo-calcareous beds. [*Physiol. Vegetale, t. 2. p. 339.*

peculiar to him who advocates it, and a e we forbidden to rely on the labors of our predecessors? Certainly not. I may therefore again refer to the interesting researches of M. Becquerel, and bring into view those mineral species which he has formed in his laboratory, and which present all the characters of their natural congeners. Neither can I omit to mention the important fact of the artificial formation of feldspar by Cagnard de Latour.

There is still another objection which may be made to the theory now presented. If, in this mixed state, the earth acts by virtue of electro-chemical forces, why are three earths requisite to the construction of a good soil? Ought not silica and lime, or lime and alumina to be sufficient to produce, in each element of the mixture, an opposite electricity? It is easy to answer this objection also, by a reliance upon facts well known to mineralogists: it is certain that the binary silicates are more rare in nature than the ternary silicates, and that their mass in particular is less powerful: silica has therefore a greater tendency to combine with lime and alumina together than with either of these earths separately. Hence, we may perceive, that the union of the three becomes necessary to constitute a soil endowed with the highest degree of vegetative power.

If the ideas which I now submit to the academy appear to deserve any attention, I propose, on the return of the favorable season, to renew the inquiry, and to devote myself to the labor of positive experiment—experiments, which, whatever may be their results in reference to my theory, will at least have the advantage of eliciting facts which may be friendly to agriculture, that science which is so prominently stamped with the character of utility.

THE SYSTEM OF PLUNDER PRODUCED BY THE SYSTEM OF IRRESPONSIBLE BANKING.

[The following letter, by Dr. Hagan, editor of the Vicksburg Sentinel, and a bank commissioner, presents a picture of effects which have not yet been produced so completely in any state except Mississippi, but which may be produced any where by the same cause, viz.: banking corporations not being held strictly responsible for all violations of their legal and moral obligations. And whatever may be the letter of the law for restraining bank frauds, the restrictions and penalties imposed are in fact made null and void, by the state and the bank being in any manner partners in trade. The partnership, and (supposed but not real) identity of pecuniary interest of bank and state, (for the state partner is sure to be the loser,) is the great evil of the system in Virginia. If banks were permitted to trade only on their own capital and credit, and without having the government for a partner and supporter, then there would be much less danger than now threatens, even if in that case they were to push their operations to the utmost wants of the trade, and judicious enterprise, of the country. Make them as much responsible for over-trading, and for incurring obligations which they cannot perform, as are all other corporations, and all individuals, and there would be no greater danger of their running into excess. But who is it, whether a private or corporate trader, who will not, for the sake of greater gain, incur obligations which cannot be redeemed, when knowing that so soon as the penalty is about to be incurred, the government, the strong partner in the firm, will step in to ward off the threatened blow, and annul the penalties incurred, and about to be incurred?—Ed. Far. Reg.]

From the Mississippi Intelligencer.

We feel it to be a sacred duty that we owe to the cause of justice, to warn the public against the infamous schemes which are now being concocted for the unholy purpose of robbing the community of their honest earnings. Every hobby, from the theory of the alchymists to the charms of animal magnetism, has had its day of triumph; but the present seems to be the age and the supremacy of swindling in Mississippi. Unless the people arouse from their lethargy and put down the nefarious band of robbers who are now maturing the most extensive system of speculation and fraud that ever disgraced a civilized country, the character and the prosperity of the state will receive a fatal blow. A high-handed system of plunder has been carried on by most of the banks in this state for the last twelve months. The people begin to feel and understand the effects of this system; but they have no idea of the deep and damning conspiracy by which the swindlers contemplate the plunder of the community. We had but an imperfect idea of the extent and the enormity of the swindling and corruption of most of the banks in this state. The chartered, and real estate or uncharter-ed joint stock companies for the issue of paper money, seem to vie with each other for supremacy in the base art of swindling the people out of their property; and we now call on the public, as they regard their own interests and the prosperity and honor of their country, to be on their guard. The banks swindled them out of the principal part of last year's crop, and they are bent on getting possession of the present. The people were deceived by the falsehood and knavery of the banks last year; but it will be their own fault if they permit the banks to rob them of this crop after this warning and past experience. The northern counties of the state are more cursed with banks than even the southern counties; they are springing up three or four in almost every county, and in many instances the unchartered or real estate banks seem to be more infamous than those that swindle under the *forms* of law. But it seems that this state is not sufficiently extensive for these plunders; and they have extented their operations to Texas. We have been credibly informed that the "Oakland Bank," "one of the machines for making money," has despatched a pair of saddle-bags full of their notes to Texas, in order to obtain the property of the people of that country for their worthless trash. It is said that the joint stock company of this county has passed off in Texas fifty thousand dollars of their paper, which is probably not worth more than a dollar a bushel. We know that it will not now pass in the very town in which it is issued, though travellers have it imposed upon

them at a distance of hundreds of miles. Banks whose charters required the stock to be paid in "in specie or the notes of specie paying banks" have been organized without a single dollar of either having been "paid in," and now these same banks are issuing and flooding the country with thousands and tens of thousands of their notes. These notes are put in the hands of agents in every part of the country in order to be advanced on the present crop of cotton; and each agent exercises banking privileges! It is in this way that the banks intend to rob the country of the proceeds of its industry. They hold out the impression that as soon as they send the cotton to market they will redeem their notes with the good money which cotton will always command; but as soon as they get possession of valuable property for their false promises to pay, they laugh at their note-holders, and use the funds with which they ought to redeem their promises, in speculations in pork, bagging and bale rope, and in purchasing up their own or their neighbor's paper at 30 or 40 per cent. discount, or the lowest price for which it can be obtained in market, and the pork, &c., is again sold to the people at two prices.

Every class of men who can exercise an influence in pursuading the honest and unsuspecting planter to exchange his cotton for this irredeemable and worthless trash, will be sought by the banks to be enlisted in this unrighteous and unholy operation. Influential men of all parties are engaged in it. Whigs, Democrats, and we are sorry to say, even Nullifiers, from whom we would expect better things, are found playing this swindling game. Every sense of justice and lofty moral feeling seems to wither and die at the approach of this odious and avaricious spirit of banking. Members of the legislature, members of the church and ministers of the gospel may be found embarked in this infamous speculation. The saddle-bags full of "Oakland" notes, (already alluded to,) which are probably not worth more than as many oak leaves, have been entrusted to a distinguished reverend gentleman to be circulated in Texas. By prayer and the assumption of piety he will more effectually succeed in disarming suspicion and in imposing on the people. He will, unless this notice arrests his swindling career, soon obtain leagues of Texas land for the contents of his saddle-bags. Men who have heretofore borne good characters, and who would scorn to pick pockets or steal a dollar from their neighbor, have now no hesitation in swindling to the amount of thousands. What is the difference between picking a man's pocket of 50 dollars, and the directory of a bank conspiring together to render 1000 dollars of their issues worth only 500 dollars. If ten mechanics receive each one dollar of this money for their labor, or ten merchants the same for their goods, each of the ten directors might as well filch fifty dollars from the pocket of one of these note-holders. The moral turpitude is the same. The very men engaged in this business will acknowledge its impropriety; but justify themselves by saying others are engaged in it, and we must in self-defence take a hand in the game. If we do not we will suffer the loss without receiving any of the profits. Now if the whole world could live in prosperity and happiness, by swindling, this might be a very good argument. But the very idea is repugnant to every principle of common sense or common justice, without which the elements of society cannot cohere.

The notes of one of these establishments will not pass 11 miles from the place of issue unless at enormous discount. In paying for our dinner a short distance from Holly Springs, we had our choice to pay 50 cents in irredeemable shin-plasters issued hundreds of miles off, or 75 cents in McEwen, King & Co.'s notes! Those who issued this paper might with as much justice have stolen my property to the amount of one-third of their notes which I spent after taking them in payment of debt; and yet it is said that this institution intends to throw out two or three hundred thousand dollars more of its paper and exchange it for cotton!

Now as it is impossible for a cheap or spurious currency, and a sound one to circulate together, the above evils will curse the country, until public indignation shall have banished them from circulation, or until the laws of the country shall have provided apartments in the penitentiary for all men engaged in this nefarious swindling. As the latter is necessarily a work of time, we now call upon the people to adopt the former. Every honest man is interested in putting down this system of robbery. Let the honest merchant, mechanic, planter, and professional man meet and declare unanimously not to receive any of these false promises to pay either in payment of debt, or for cotton, or for merchandise. Now is the time to destroy these worse than Egyptian plagues. Let the planters refuse to take their paper in payment for cotton. If they are indebted to the banks, let them sell their cotton for good money, and purchase up the trash to pay the bank debts. This will be an effectual mode of disinfecting the country, and eradicating one of the most loathsome diseases that ever afflicted a people not under the special vengeance of the Deity. If the people do not pursue this plan, but place their cotton again in the hands of the swindlers, they may prepare to pay 40 or 50 dollars a barrel for pork next year. Their currency will also be worth about 50 cents in the dollar, and the banks will reap another glorious harvest, buying up bank notes, extorting from the planters and mechanics about three prices for provisions, bagging, bale rope, &c., and finally they will destroy the whole planting and mercantile interests of this country. The honest portion of the community is called on by every consideration of justice, of patriotism, of self-respect and self-defence, to consult together and unite in one solid phalanx to resist the desolating march of these bold and daring swindlers.

Some of the banks will resort to every trick and device to deceive the people this year and to get the control of the present crop of cotton. They took the lion's share of the last crop, and it will require some ingenuity to cheat the planter again. Last year they held out the idea that they would check on the north in a few weeks and make their paper good; this year they will be compelled to raise the value of their paper, which they will do about the commencement of the season. They will then induce the belief that they intend to resume specie payments every month. But let the people have nothing to do with their paper or their promises till they commence paying specie. They were deceived last year; this was the fault of the banks; if they are plundered this year, the fault

will be their own. When the report of the bank commissioners shall appear, the oldest swindlers will be astounded at the scenes of speculation, corruption and fraud which modern banking has given rise to in this state.

JAMES HAGAN.

From the Farmers' Cabinet.

STATEMENT OF THE CULTURE AND PRODUCTS OF A LOT, THROUGH A SERIES OF YEARS.

Catawissa, Columbia county, Pa.,
Oct'r. 11, 1838.

Dear Sir—Knowing the deep interest that you have taken in the promotion of agriculture, and possessing something of the same spirit, induces me to communicate to you the manner that I have pursued in farming a lot, containing three acres and three quarters, adjoining our town. I have also farmed 130 or 140 acres to very good effect, a part of which has produced quite equal to the lot above mentioned. The lot is on the second rise from the river Susquehanna, and was formerly covered with yellow pine saplings—the soil is rather light—I purchased it 14 or 15 years since. I farmed it for seven or eight years with wheat and clover alternately, mowing the first crop of clover and ploughing down the second, and sowing wheat after one ploughing, and harrowing it in. I have had 40 bushels of clean wheat to the acre in this way of farming, and found my land to improve. In the autumn of 1833, I sowed timothy seed shortly after my wheat, and in the spring following clover seed also, and had a good crop of wheat in 1834.

In July 1835 I cut 16½ tons of excellent timothy and clover hay from this piece of land, say worth $12 per ton, amounting to	$198 00
July 1836 cut 14½ tons of hay at $12	174 00
July 1837 cut 15½ tons of hay at $12	186 00
Oct. 1838 had 636 bushels of corn in the ear from 3½ acres of it, say 318 bushels of corn at 75c. per b.	238 50
Oct. 1838 had from ¼ of an acre of headlands of lot, 30 bushels of potatoes at 75 cts. per bushel	22 50
Oct. 1838 had 200 pumpkins grown among corn at 1 ct. each	2 00
Prod. of 3¾ acres for 4 successive years	$821 00

In the statement of the corn I have not included 10 or 12 bushels of ears, sold or taken from the lot for boiling. The crop is rather extraordinary for the season. Last fall I ploughed down the sod that had been mowed for the three previous years, which sod had been well manured the spring before—early this spring it was well harrowed, and at planting time it was furrowed out three feet apart each way, and four grains put in each hill, and two rows of potatoes planted around the lot. The cultivator was principally used in dressing the corn, and at the last dressing, one half the lot was reduced to two stalks to the hill, leaving three stalks in the other half, and taking care to let the thriftiest plants remain. In furrowing out, care was taken not to turn up the sod.

On examination of the ears, it was found that where there were three plants to a hill they were more numerous, but where there were two only, the ears appeared to be larger. It was the large yellow corn that was grown, and some of the ears were eight inches in circumference, and many of them from 13 to 14½ inches in length. The seed was taken from stalks that had two or three ears on each, taking the upper and the best one. The lot has been sown with wheat since the corn was taken off; it had been topped, and as the ploughing progressed, a man and boy pulled up the stalks and placed them in the furrows, with the but or root end towards the plough, and in this way the whole of them are completely buried, and if I mistake not, will decompose and make a good manure. The ploughing turned up the old sod which had not been disturbed during the season, and it presents at this time on the surface the appearance of a rich coat of manure, and I would not exchange the chance for wheat from this piece for that of any other of the same size—if I live till next harvest I will let you know the result.

I think there is an average crop of corn in the valley of the Susquehanna, from this to Wilksbarre, say 45 miles. The crop of hay never was exceeded; wheat excellent; rye and oats rather light, buckwheat very light, having been destroyed in most instances by the frost in the early part of September.

Respectfully, your friend,
JOSEPH PAXTON.

From the Library of Useful Knowledge.

FLEMISH HUSBANDRY.

Of the Cultivation of Roots, Potatoes, Turnips, Beets, Carrots, Parsnips, Chicory,

If we are indebted to the Flemish for the introduction of clover and turnips into our agriculture, they are equally so to us for the valuable potato. This root is now become a great substitute for corn throughout all Europe, and its influence on the population cannot be denied; when corn fails potatoes are generally most abundant, and thus prevent that distress, which is so great a check to population. In Flanders potatoes form a part of every rotation, the light soils being peculiarly adapted to the growth of this root; and as a great part of the produce is consumed by cattle, and thus gives an adequate return in manure, the objection often made to its extensive cultivation, that it exhausts the soil and returns little to it, is not well founded. Where it not for potatoes to keep the cattle during the latter part of the winter and beginning of spring, when the supply of turnips fails, a much smaller number could be kept; for hay is a dear fodder in most parts of Flanders.

Potatoes were at first only known as an esculent root in gardens; and it was a long time before their real value was found out. In 1740 they were for the first time sold in the market of Bruges, in consequence of the zeal of an individual of that town, Mr. Verhulst, who distributed some sets gratuitously to the farmers in the neighborhood. From that time the cultivation increased rapidly, and spread all over the country. The varieties which are mostly sold in the towns are the earliest and best flavored, which are chiefly raised in sheltered gardens. The plant being a native

of a warmer climate cannot bear the least frost. It is therefore not safe to plant it in the fields before March or April. The sets which are planted to produce an increase, are not seeds but buds, and as such perpetuate the qualities, good or bad, of the parent stock. Each variety proceeds from some original plant raised from seed, and is subject to age and decay with its parent. Hence varieties continually degenerate or wear out, and fresh or new varieties must be produced by sowing the seeds; recent experiments and observations fully bear out the truth of this assertion. It is therefore not sufficient merely to find a superior variety, the age of the parent plant should also be noted. Some will last longer than others, but all old varieties sooner or later show marks of decay; and the sooner they are exchanged for younger and more vigorous the better. In Flanders the principal crop of potatoes is planted in April. Potatoes require much manure to give a great return, although those which grow in poor soils are much pleasanter to the taste. For cattle, however, quantity is of more consequence than flavor. The soil in which potatoes are to be planted should be well prepared by deep and repeated ploughing, or what is still better, by trenching with the spade. In Flanders the sets are planted in rows two feet wide or more, and the same distance between the sets, so that each plant may have the earth drawn up to the stem, and a small hillock made round it. Sometimes the land is ploughed and manured as for other crops, excepting that the quantity of manure is at least double the quantity usually put on for corn. The sets are then dropped into holes regularly made with a blunt dibble, and filled up with earth. These sets are either small potatoes picked out for that purpose, or larger cut into pieces, taking care that there shall be at least two eyes or buds left in each piece. When potatoes are planted to any considerable extent, the method is similar to that which we described for beans, the furrows being proportionably deeper; the sets are dropped upon the dung in every second or third furrow about eighteen inches apart, and covered by the return of the plough. In this manner nine or ten bushels of potatoes will plant an acre. The crop averages about three hundred bushels, if the land is well prepared, and the potato plants have been well hoed and moulded up. This is not a very great return, considering the quantity of manure. The quality of the potatoes depends on the nature of the soil as well as on the variety planted; in light sands the potatoes are small, and mealy when boiled; in good loams they grow large and more juicy, but are not so well flavored; the latter producing a greater bulk, are preferred for cattle.

There is a potato called *Schelde Windeke* potato, from the name of a village near Alost: they grow in a strong soil and are remarkably mealy and good; but they rapidly degenerate when planted in a different soil. The potatoes which are preferred for cattle are called *Elsen Motten* and *Kattenbollen*, both very large. A variety was introduced from England into the neighborhood of Ghent some years ago, by a gentleman of the name of Lankman, which are in great repute, and go by his name. It would be difficult to point out the variety from which these sprung, as the soil in which they are transplanted has, no doubt, had a great influence on their present quality. A few small Flemish potatoes, which we once sent to a friend at Kenilworth, produced in that rich soil some of the largest potatoes we ever met with. None of the original potatoes were so large as a hen's egg.

When we were on the subject of manures, we mentioned the pond weeds as highly useful in planting potatoes. Long litter and even old thatch is excellent to plant the sets in, if the soil is not very light. Potatoes are usually taken up in the end of September; this is done by means of a three-pronged fork, which is less apt to cut the roots than the spade. The ground is at the same time cleared of the roots of couch grass, and other perennial weeds: and when the harrows have gone over the field, and all the potatoes are picked up which had escaped the fork, no other preparation is required to sow wheat, or winter barley. When the seed is sown, the stitches are marked out by the plough, the intervals dug out, and the earth is spread over the seed, after the urine cart has deposited half the usual quantity of liquid manure in these intervals. This is sufficient on land which has had a double manuring for the potatoes.

Turnips are not often cultivated as a main crop, or a substitute for the old fallows, as it is in England and Scotland; but mostly as a second crop after barley or rye, which we call *eddish turnips* in England. But as the barley and rye harvest are early in Flanders, and not an hour is lost in getting the turnip-seed sown, they are often of a very good size before winter.* The crop, however, can bear no comparison in point of weight, with a turnip crop in Norfolk, still less in Berwickshire and Northumberland; but it is obtained at a small expense, and does not interfere with any other crop. In a farm of twenty acres, if five acres were set apart every year for turnips, the remainder would scarcely give sufficient occupation to the farmer and his family, and produce sufficient corn to feed them and to pay the rent. It is by quick succession of crops that a small farm is made to produce much more in proportion than a large one, and that every member of a family is constantly and busily employed. As soon as the corn is cut, the portion of the field which is cleared is ploughed and harrowed, liquid manure is poured over it, and the seed is sown; so that in twenty-four hours an acre, which was but just cleared, is again producing a fresh crop. The ploughing and sowing goes on every day, and follows on the heels of the reapers; of such consequence may be the delay of two or three days, that the seed sown first will be out and in the rough leaf, when that which was two or three days later is only just coming up, and is subject to all the depredations of insects. When the turnips are fairly up,

* Mr. Van Aelbrock sowed some turnips in May, 1837, and they were of sufficient size in August to be given to the cows. Large turnips are not thought so sweet as the smaller, which do not give that disagreeable taste to the milk, which prevents many farmers in England from giving them to milch cows. The introduction of early turnips in Flanders might be of great advantage. If winter tares were sown to be cut in May, and turnips to follow immediately, these two crops, with the intermediate ploughing, would prepare the land admirably for wheat or colza, and not only give two useful crops; but have all the meliorating and cleansing effect of a fallow.

they are watered with diluted urine; and their growth is rapid beyond belief. We have seen turnips sown in the middle of July, after barley harvest, which in the end of August already showed very promising bulbs. If it were not for this acceleration of the growth, no crop of any weight could be raised by the end of September, when they are usually pulled up.

The cultivation of the beet-root had been introduced into Flanders under the dominion of Bonaparte, for the manufacture of sugar; it was then a forced cultivation, and was abandoned as soon as peace had restored the usual supply of sugar from the colonies; and although the revival of this manufacture in France, where considerable fortunes have been lately realized by it, has induced several speculative individuals, and also a company with a large subscribed capital to re-establish manufactories of beet-root sugar in different parts of Belgium, the Flemish farmers in general are not much disposed to raise the beet-root for sale. They imagine, whether correctly or not, that the land suffers from this crop, when there is no return of manure, as much as it would from potatoes sold off the farm, while the latter are much more profitable; and the carriage of this heavy produce to any distance through roads almost impassable in autumn greatly diminishes the return. The manufacturers of sugar have found, in consequence, that they cannot rely on a longer supply from the farmer, and that they must enter into the cultivation of the beet-root to a large extent on their own account, to keep up a proper supply. The company established near Waterloo have purchased a large tract of land, a great part of which is in woods, which they are cutting down and converting into arable land for this purpose; on this fresh soil, which is by no means rich, the beet-root appears to thrive well. A large sugar manufactory is erected at Bruges, another near Ghent, and a smaller near Dixmude, and various other places, which will require many hundreds of acres for beet-root annually, and thus make this root an important article of cultivation. The mode in which this root is cultivated has nothing peculiar in it. The land is ploughed and well manured; the seed is dibbled, as in the garden, in rows a foot or eighteen inches wide and a foot asunder in the rows; when the plants are up they are weeded and hoed by hand; the seed is put into the ground in the beginning of May, and the roots taken up in September and October. A common crop is from fifteen to twenty tons of roots from an acre of land.

This cultivation has not been adopted for a sufficient number of years to ascertain what rotation is most profitable, where beet-root is the principal object. Those who are sanguine think that alternate crops of beet-root and corn may be kept up by good tillage and manuring. The old farmers are of opinion that there will soon be a great falling-off in the crops. Time will show who are right. In the mean time the cultivation of the white and yellow beet, which contain most saccharine matter, is extending rapidly. A small portion only of these useful roots is raised for the cows. They are not supposed to be so good for the milk as turnips, and they take up the whole season. Should the cultivation be greatly extended, it may have a great effect in causing a variation in the usual rotations of crops, now generally adopted. The advantage to agriculture of the beet-root sugar manufactory, where good land is not over-abundant, is still problematical.

The *ruta baga*, or Swedish turnip, which is so highly valued by the British farmer, is not generally cultivated in Flanders. If a few small patches of it are seen, it is only as an experiment made by some rich proprietor. It does not enter into the regular system of cultivation, and is not so well suited to sandy soils as the turnip.

Carrots grow well in light soils, which have been trenched to a good depth, and they consequently form a part of the regular rotations in all light soils; when they are sown as a principal crop, it is generally next after potatoes, buckwheat, or turnips. The land, having been well stirred for these crops, is ploughed before winter, and manured with half the usual quantity of cows' dung, or of the sweepings of streets, with which is mixed a third part of pigs' dung, from the notion that the smell of this dung keeps off the moles and field mice, who otherwise would injure the crop. This is ploughed in six or seven inches deep, and the land is left so all winter. In the beginning of April, a very deep ploughing is given, two or three inches deeper than the last; twenty hogsheads of liquid manure are then poured over this, and 2½ lbs. of carrot seed are sown. The harrows reversed are drawn over the land; the intervals between the stitches, are dug out with the spade, and the earth thrown evenly over the seed. It is slightly rolled. Some put on no dung, but only liquid manure on the land intended for carrots. If the preceding crop was potatoes, the ground is already sufficiently manured, and any additional quantity would have a tendency to produce forked carrots, which is the consequence of over manuring; but if they follow buckwheat, which has had no manure, a fresh supply is necessary to ensure a good crop of carrots. The more the manure is decomposed and intimately mixed with the soil, the better for this crop. When the carrots come up, they require to be most carefully weeded; this is the principal expense. It is done by women and children, who go on their hands and knees and pull up every weed. If carrots were sown in drills much of this labor might be spared, by using horse-hoes between the rows, and small hand hoes between the plants in the rows. Should the carrots fail, turnips or spurry are immediately sown, that no time may be lost. In May the carrots are thinned out where they grow too close, and those which are pulled out are given to the cows; they are left about six inches apart.

There are two sorts of carrots sown in the fields; the one is the large Dutch orange carrot common in England, the other is a white carrot which is very hardy, grows to a great size, and is more productive in light sands than the orange. It has lately been introduced into England; some fine specimens of the root were exhibited at the Smithfield show in December 1836. From a trial on a small scale, we are inclined to think that it will be a valuable addition to our roots for cattle in winter. The white carrot is that which is generally preferred for sowing in another crop, as flax or barley, which is a common practice. In this case the carrot seed is sown a week or two after the principal crop. The flax or corn grows faster than the carrot, which is thus kept down, and only pushes

its slender root deep into the ground without making much top, or swelling to any size. In weeding care is taken not to pull out the carrots, which are easily distinguished from weeds. After the flax is pulled, the ground is gone over and weeded again; liquid manure is then spread over, and the carrots soon begin to grow, and the roots to swell. If the main crop was barley, the stubble is carefully pulled up, and the carrots are then treated as before. Thus by the middle of October a good weight of carrots is produced on land, which had already given a profitable crop that season and a great supply of winter food is obtained for the cattle. Carrots are occasionally sown amongst peas. The peas ripen in July, and are pulled up; and then the carrots are treated as we have been describing. If the row culture were introduced, and the carrots and peas drilled in alternate rows, the success would probably be more complete. This is done in the intervals of the colza or rape with good success. About fifteen small cart-loads of carrots, or about ten or twelve tons per acre, is considered a fair crop. Judging from the produce of about one-eighth of an acre of good sand, in which the white carrot was sown in England, in March 1836, without manure, the rows a foot apart and well weeded and hoed, the crop would have reached twenty-two tons per acre: the common orange carrot in the same ground did not produce half that weight.

Parsnips are sown in land too heavy for carrots; and in a deep rich loam, the produce is very great. They have the advantage of bearing the severest frost, and therefore do not require to be housed, but may be left in the ground until they are required for use. They are not thought so good for milch cows as carrots, but superior for fatting cattle. The quality of the soil must decide which of the two may be sown to most advantage.

There is another root, the cultivation of which is often very profitable, although of comparatively small use on the farm. This is chicory, of which the dried roots are roasted and used instead of coffee. A considerable commerce in this root has sprung up lately, which has caused a duty of £20 per ton to be laid on its importation into Britain. It is the same plant which Arthur Young so strongly recommended for its leaves for cattle and sheep; but it has not been found to answer the expectation in this point of view. The roots contain a strong bitter, which may be extracted by infusion; it is also used in the brewing of beer to save hops. It is wholesome, and if it does not impart an unpleasant taste to the beer, there can be no objection to its use. At all events the cultivation of it, whether for beer or coffee, is a part of Flemish agriculture, and deserves to be noticed. The seed is sown in the end of March or beginning of April. It is treated exactly as the carrot, when sown alone. The ground should be mellow and deep, rather heavy than light, and ploughed or trenched to a good depth. It is sown broad-cast in Flanders, as every thing else is; but it would be much better if it were sown in rows eighteen inches apart. The leaves may be given to sheep or pigs; but they give a bad taste to the milk of the cows who eat them. The roots are taken up in September, and are then of the size of a small carrot; they are cut into pieces, and dried in a kiln. In that state they are exported. The price varies much, according to produce and demand. It is not an object of general cultivation, but only by particular persons and in particular soils; the market is overstocked at one time, and a great demand exists at another. Such a produce can never enter into a regular course, but may be raised as circumstances may afford a prospect of sale and profit.

From the Farmers' Cabinet.

BLUE MUD.

Mr. Editor—There is an article on our salt marshes called *the blue mud*, which doubtless possesses many fertilizing properties. Several farmers have endeavored to experiment with it in their agriculture, but these have been very few, and their experiments quite limited. Where the article has been exposed to severe frost, say one winter, (the object is to pulverize it) and applied to corn in the month of May, when it is two inches out of the ground, it has had a very fine effect. The corn being three times as good where this mud was applied, than in any other portion of the field. If this article is a valuable manure, we have an inexhaustible store—and need not fear the apparent increasing poverty of our lands. The probable properties are sea-salt, oil and sulphur. Some suppose it is the washings of the upper country, having a clay basis. This seems improbable, from the fact, that when a ditch is dug, where the tide has access, it will be filled in a very short time with this substance. But what renders it difficult to determine, is the clay accompanying it; it is affirmed that the sea does not deposit that. As it will be a cheap manure, and easily obtained by every farmer, whether proprietor or rentor of land, if found to be valuable, my object is to elicit information through the pages of the Cabinet. I hope some gentleman who is acquainted with the deposits of the flood-tide, (as this is the tide bearing to our shores) will give us an essay on the subject, and whether he has thoroughly investigated it or not, any additional knowledge of its properties will be gladly received by the farmers of Kent county, Delaware. If any gentleman, having experimented with it on his land, will give us the result of the same, it may help agriculture onward. At present there is a spirit of agricultural improvement in Kent county; and a dwindling away of that prejudice so long fostered against agricultural papers, in so much, that almost every farmer is patronizing or anxious to subscribe for some good practical journal. It is therefore a matter of interest to the proprietors of the Cabinet, as well as the farming community at large, to enrich the pages of their work with articles of utility. Your friend,

A SUBSCRIBER.

Dover, Kent Co., Del. Sep. 15, 1838.

From the Farmers' Cabinet.

THE MULBERRY—SILK, ETC.

Burlington, N. J. Aug. 1, 1838.

Your letter of the 11th ult., was duly received, in which a number of interrogatories on the subject of silk-growing, &c., were addressed to me,

but, by reason of other engagements, I have been obliged to delay answering them until the present time. In replying to your questions, it will be necessary for me briefly to recapitulate them. "Question 1. Have you been long engaged in cultivating the mulberry? 2. What species of morus do you deem preferable, and what kind of soil suits it best? 3. What is the best mode of propagating, planting, and managing it? 4. What is the value, expense, and profit on an acre of mulberries for the first five years inclusive? 5. What kind of worm do you consider the most valuable? 6. What help does it require to raise one hundred pounds of silk? 7. What buildings, fixtures, &c., are necessary in this latitude to raise one hundred pounds of silk? 8. What bounty or bounties does the legislature of your state offer to encourage the growth of silk? 9. Is there a ready market for cocoons and reeled silk? Any other information you may be pleased to communicate in accordance with the foregoing questions, will be thankfully received and duly appreciated." I will endeavor to give each of these questions, in their order, a fair investigation.

First. "Have you been long engaged in cultivating the mulberry?" I am one of the number who first commenced the silk-business in this vicinity, and have devoted the two last years with close application, practically, to the culture of the morus multicaulis, and rearing the silk-worm.

Second. "What species of morus do you deem preferable, and what kind of soil suits it best?" I have taken much interest during the last few years, in comparing the relative qualities of the different mulberries; and at present I know of none I deem preferable to the morus multicaulis for this and the more southern latitudes, for the silk-business. The Alpine, the Canton, and the Brussa, are excellent species, and may be well adapted to the more northern latitudes; but they are slower of growth, and less productive of foliage. Most of the different species I have seen, which are fourteen or fifteen varieties, require four or five years' growth before having much foliage to part with; but the multicaulis will yield a large quantity the first year's growth without injury to the tree, and is eaten with great avidity by the silk-worm. The mulberry that is most productive of fruit, is less productive of foliage. The multicaulis produces very little fruit, and is not often grown from the seed. It will flourish well on all soils where the peach tree does. To select a location on which to plant a field for the silk-business, I would prefer undulating grounds, having a deep mellow loam, and mixed with sand and gravel sufficient to prevent the soil from baking or crusting.

Third. "What is the best mode of propagating, planting, and managing it?" After having the ground made mellow, lay out the field in rows about four feet apart, and the surest mode, by taking one season with another, is to lay the trees down full length and cover deep enough to keep moist. The time for planting in this latitude, I think, will be during the first and second weeks in April, in common seasons. By planting a field of mulberries in this mode they must be taken up in the autumn, as they will stand too near each other to remain in the ground. But to plant a field of mulberries not to be taken up in the fall, my views are, to lay out the rows about five feet apart, and plant, in the rows, roots or cuttings two feet apart, and in the autumn take up every other tree in the rows, leaving them standing four feet apart; the remainder to have the tops cut off near the ground in the fall. The following spring, many shoots from each stump will start up with vigor, and produce abundance of foliage, and easy to be gathered. Where the field is large, I think every fifth row may be omitted and not planted, but used as a passage for a cart or wagon, in which to transport the foliage to the cocoonery. Our experiments, made this season, have proved the feasibility, that mulberries treated in the above manner, will fulfil the most sanguine anticipations.

Fourth. "What is the value, expense and profit, on an acre of mulberries for the first five years inclusive?" To answer this, it will require some philosophical speculations, as the feeding of silk-worms from an acre of multicaulis of four or five years' growth, has not been done by me, or under my observation. At the rate of fifty pounds reeled silk to the acre has been produced from the first year's growth of trees. But from an acre planted in the manner I have described, thirty pounds the first year will be a fair production, and by leaving the roots in the ground and pruning the tops in the autumn, I deem it not extravagant to estimate one hundred pounds reeled silk yearly on an average, the four succeeding years after the first year's growth of trees. After the cocooneries and fixtures for feeding are prepared, we can feed the silk-worms and reel the silk at an expense not over two dollars and fifty cents per pound, and it is then worth from four dollars and fifty cents to six dollars a pound to the manufacturer.

Fifth. "What kind of worm do you consider the most valuable?" At present, I know of none I prefer to the white mammoth worm, so called; but we have a kind that spins a large yellow cocoon, and is a very good kind. The silk of the white is worth most. We have a kind called the two-crop kind, as it can be re-produced the same year, but they spin a small cocoon.

Sixth. "What help does it require to raise one hundred pounds of silk?" It requires a person having experience to take charge of the feeding, who can manage during the first week alone after the worms hatch, and the second week a boy or girl will be wanted to pick leaves, and after that another person, equal to a full hand, will be all that will be required to finish the crop, which will be about three hundred thousand in number. By this calculation I expect the cocoonery to be convenient to the mulberry field. It requires two hands to change the worms dexterously, but they can attend to that in the morning, when the dew will be upon the leaves, and to gathering the foliage after the dew shall disappear. A stock of leaves will always be wanted before hand, lest there should be rainy weather, when they cannot gather them.

Seventh. "What buildings, fixtures, &c., are necessary in this latitude to raise one hundred pounds of silk?" Common rough made buildings will answer well to feed in. I have seen a common barn used as a cocoonery, and the silk-worms do exceedingly well. They like a gentle current of fresh air to keep them healthful. The fixtures, &c., such as we have adopted in this place for feeding, I described to you in a former letter. [See Farmers' Cabinet, Vol. II, p. 331.]

Our fixtures for spinning, are common sawed lath placed about three inches apart on the under side of the shelves, and some simple means fixed for the worms to mount up on. They spin their cocoons in the corners, where the lath comes in contact with the shelf.

Eighth. "What bounty or bounties does the legislature of your state offer to encourage the growth of silk?" The legislature of New Jersey at its last session passed a law granting fifteen cents premium, per pound, on cocoons, the production of this state, and to be in force five years.

Ninth. "Is there a regular market for cocoons and reeled silk?" There are regular markets at fair prices for cocoons produced near where manufacturing silk has now begun. The transportation of large bodies of cocoons to a distance, is not practicable. The manufacturers are anxious to obtain all the good reeled silk our country can produce at present, and for some years to come, and pay a much higher price than for the best imported. Those who raise silk and wishing to sell it in its raw state had better reel it into skeins, and it is then in a merchantable condition.

Mr. Gamaliel Gay is the inventor of a set of machinery which is now in use in this place, that first spools the silk from the cocoons, and is then doubled and twisted into sewing silk, and is thought will answer a good purpose.

I have answered your interrogatories in a manner that appears most feasible to my views, but I do not pretend to lay down any particular modes or systems as applicable to all future generations.

Respectfully yours,

CHAUNCEY STONE.

Jos. S. Naudain, M. D., Middleton, Del.

From the Farmers' Cabinet.

DON'T FORGET TO LIME.

A short time since a farmer was inquired of why he didn't use lime as a manure? His reply was, "I can't afford it."

What, can't afford to make your fields produce twice as much grain and grass as they have heretofore furnished; I don't understand that kind of logic.

Well, I don't see how I could well afford to buy lime; it costs money, you know.

Yes, it costs money, that is true; and what is the use of money but to lay it out in such way as to make it produce more, in the same way that we sow wheat and plant corn, in order that we may get more wheat and corn in return.

The true plan of using money is to vest it so as to make it as productive as possible; and there is no way that I know of by which a farmer can make his funds increase faster, than by so applying them as to increase the fertility of his farm.

That wise old farmer, William West, admonished his friends and neighbors "to be kind to the soil;" well knowing from his own experience that the result would be prosperity; but those who go on skinning and impoverishing it, are acting the part of the old woman who killed the goose that laid the golden egg; they soon arrive at that state when they think—

"They can't afford to lime."

There is a class of people in the world, and some of them are called farmers, who despise small things, and therefore they can never achieve great ones; they are too proud to thrive, and too lazy to grow rich; and because they can't do things on a large scale, omit to do them altogether, and these are the people—

Who can't afford to lime.

George Esher, the worthy and successful farmer and horticulturist, who is referred to under the heading of "More fruits of industry and intelligence" in vol. ii. p. 306 of the Cabinet; humble as was the commencement of his career in life, could always afford to buy manure, because he knew that if he enriched his soil, *it* would in turn enrich him, and in this way they have been going on for half a century, conferring reciprocal benefits on each other, and it is now a question not easy to determine which is the richer, George, or his farm, for—

He never said he couldn't afford to lime.

Those who think they can't afford to lime much, should lime a little; make a beginning, for there is nothing like commencing to do right. A farmer some years since was prevailed upon to buy lime enough to dress about ten acres of his ground; this gave him a start, and the increased produce gained by this trial, has induced him to continue it since, and from that time he began to thrive, and now he thinks—

He can afford to lime.

X.

POOR RICHARD'S ALMANAC.

The Way to Wealth, as clearly shown in the Preface of an old Pennsylvania Almanac, entitled, Poor Richard Improved.*

Courteous Reader.—I have heard, that nothing gives an author so great pleasure, as to find his works respectfully quoted by others. Judge, then, how much I must have been gratified by an incident I am going to relate to you. I stopped my horse lately, where a great number of people were collected, at an auction of merchants' goods. The hour of the sale not being come, they were conversing on the badness of the times; and one of the company called to a plain clean old man, with white locks, 'Pray, Father Abraham, what think you of the times? Will not these heavy taxes quite ruin the country? How shall we ever be able to pay them? What would you advise us to?' Father Abraham stood up, and replied, 'If you would have my advice, I will give it to you in short, "for a word to the wise is enough," as Poor Rich-

* For many years Dr. Franklin published an almanac, under the fictitious name and authorship of Richard Saunders. It was distinguished for its proverbs, and old sayings, calculated to teach habits of industry and frugality, and addressed to the taste and feelings of common people. It was much valued, and gained an individuality of character, both for itself and for "Poor Richard," as its author. The following article formed the preface to one of the last numbers; in which the author, in a manner both amusing and impressive, brings together most of the old proverbs which had been scattered through the earlier numbers of Poor Richard's Almanac.—ED. FAR. REG.

ard says.' They joined in desiring him to speak his mind, and gathering round him, he proceeded as follows:

'Friends,' says he, 'the taxes are, indeed, very heavy, and if those laid on by the government were the only ones we had to pay, we might more easily discharge them; but we have many others, and much more grievous to some of us. We are taxed twice as much by our idleness, three times as much by our pride, and four times as much by our folly; and from these taxes the commissioners cannot ease or deliver us, by allowing an abatement. However, let us hearken to good advice, and something may be done for us; "God helps them that help themselves," as poor Richard says.

'It would be thought a hard government that should tax its people one tenth part of their time, to be employed in its service; but idleness taxes many of us much more; sloth, by bringing on diseases, absolutely shortens life. "Sloth, like rust, consumes faster than labor wears, while the used key is always bright," as poor Richard says. "But dost thou love life, then do not squander time, for that is the stuff life is made of," as poor Richard says. How much more than is necessary do we spend in sleep! forgetting, that "the sleeping fox catches no poultry, and that there will be sleeping enough in the grave," as poor Richard says.

'"If time be of all things the most precious, wasting time must be," as poor Richard says, "the greatest prodigality;" since, as he elsewhere tells us, "lost time is never found again; and what we call time enough always proves little enough;" let us then up and be doing, and doing to the purpose; so by diligence shall we do more with less perplexity. "Sloth makes all things difficult, but industry all easy; and he that riseth late, must trot all day, and shall scarce overtake his business at night; while laziness travels so slowly, that poverty soon overtakes him. Drive thy business, let not that drive thee; and early to bed, early to rise, makes a man healthy, wealthy, and wise," as poor Richard says.

'So what signifies wishing and hoping for better times? We may make these times better, if we bestir ourselves. "Industry need not wish, and he that lives upon hope will die fasting. There are no gains without pains; then help hands, for I have no lands," or, if I have, they are smartly taxed. "He that hath a trade, hath an estate; and he that hath a calling, hath an office of profit and honor," as poor Richard says; but then the trade must be worked at, and the calling well followed, or neither the estate nor the office will enable us to pay our taxes. If we are industrious, we shall never starve; for, "at the working man's house, hunger looks in, but dares not enter." Nor will the bailiff or the constable enter, for "industry pays debts, while despair increaseth them." What though you have found no treasure, nor has any rich relation left you a legacy, "diligence is the mother of good luck, and God gives all things to industry. Then plough deep, while sluggards sleep, and you shall have corn to sell and to keep." Work while it is called to-day, for you know not how much you may be hindered to-morrow. "One to-day is worth two to-morrows," as poor Richard says; and farther, "never leave that till to-morrow, which you can do to-day." If you were a servant, would you not be ashamed that a good master should catch you idle? Are you then your own master? Be ashamed to catch yourself idle, when there is so much to be done for yourself, your family, your country, and your king. Handle your tools without mittins; remember, that "the cat in gloves catches no mice," as poor Richard says. It is true, there is much to be done, and perhaps you are weak-handed; but stick to it steadily, and you will see great effects, for "constant dropping wears away stones; and by diligence and patience the mouse ate in two the cable; and little strokes fell great oaks."

'Methinks I hear some of you say, "must a man afford himself no leisure?" I will tell thee, my friend, what poor Richard says; "employ thy time well if though meanest to gain leisure; and since thou art not sure of a minute, throw not away an hour." Leisure is time for doing something useful; this leisure the diligent man will obtain, but the lazy man never; for "a life of leisure and a life of laziness are two things. Many, without labor, would live by their wits only, but they break for want of stock;" whereas industry gives comfort, and plenty, and respect. "Fly pleasures, and they will follow you. The diligent spinner has a large shift; and now I have a sheep and a cow, every one bids me good-morrow."

'II. But with our industry we must likewise be steady, settled, and careful, and oversee our own affairs with our own eyes, and not trust too much to others; for, as poor Richard says,

> "I never saw an oft-removed tree,
> Nor yet an oft-removed family,
> That throve so well as those that settled be."

And again, "three removes is as bad as a fire;" and again, "keep thy shop, and thy shop will keep thee;" and again, "if you would have your business done, go, if not, send." And again,

> "He that by the plough would thrive,
> Himself must either hold or drive."

And again, "the eye of the master will do more work than both his hands;" and again, "want of care does us more damage than want of knowledge," and again, "not to oversee workmen, is to leave them your purse open." Trusting too much to others' care is the ruin of many; for, "in the affairs of this world, men are saved, not by faith, but by the want of it?" but a man's own care is profitable; for, "if you would have a faithful servant, and one that you like, serve yourself. A little neglect may breed great mischief; for want of a nail the shoe was lost, and for want of a shoe the horse was lost, and for want of a horse the rider was lost," being overtaken and slain by the enemy; all for want of a little care about a horse-shoe nail.

'III. So much for industry, my friends, and attention to one's own business; but to these we must add frugality, if we would make our industry more certainly successful. A man may, if he knows not how to save as he gets, "keep his nose all his life to the grindstone, and die not worth a groat at last. A fat kitchen makes a lean will;" and

> "Many estates are spent in the getting,
> Since women for tea forsook spinning and knitting,
> And men for punch forsook hewing and splitting."

"If you would be wealthy, think of saving, as well as of getting. The Indies have not made Spain rich, because her outgoes are greater than her incomes."

"Away then, with your expensive follies, and you will not then have so much cause to complain of hard times, heavy taxes, and chargeable families, for,

"Women and wine, game and deceit,
Make the wealth small, and the want great."

And farther, "what maintains one vice, would bring up two children." You may think, perhaps, that a little tea, or a little punch now and then, diet a little more costly, clothes a little finer, and a little entertainment now and then, can be no great matter; but remember, "many a little makes a mickle." Beware of little expenses; "a small leak will sink a great ship," as poor Richard says; and again, "who dainties love, shall beggars prove;" and moreover, "fools make feasts, and wise men eat them."

'Here you are all got together to this sale of fineries and nick-nacks. You call them *goods*, but if you do not take care, they will prove *evils* to some of you. You expect they will be sold cheap, and perhaps they may, for less than they cost; but, if you have no occasion for them, they must be dear to you. Remember what poor Richard says, "buy what thou hast no need of, and ere long thou shalt sell thy necessaries." And again, "at a great penny-worth pause awhile." He means, that perhaps the cheapness is apparent only, and not real; or the bargain by straitening thee in thy business, may do thee more harm than good. For in another place he says, "many have been ruined by buying good penny-worths." Again, "it is foolish to lay out money in a purchase of repentance;" and yet this folly is practised every day at auctions, for want of minding the almanac. Many a one, for the sake of finery on the back, have gone with a hungry belly, and half-starved their families; "silks and satins, scarlet and velvets, put out the kitchen fire," as poor Richard says. These are not the necessaries of life, they can scarcely be called the conveniencies; and yet, only because they look pretty, how many want to have them? By these, and other extravagancies, the genteel are reduced to poverty, and forced to borrow of those whom they formerly despised, but who, through industry and frugality, have maintained their standing; in which case it appears plainly, that "a ploughman on his legs is higher than a gentleman on his knees," as poor Richard says. Perhaps they have had a small estate left them, which they knew not the getting of; they think "it is day, and it will never be night: that a little to be spent out of so much is not worth minding; but always taking out of the meal-tub, and never putting in, soon comes to the bottom," as poor Richard says; and then, "when the well is dry, they know the worth of water." But this they might have known before, if they had taken his advice; "if you would know the value of money go and try to borrow some; for he that goes a borrowing goes a sorrowing," as poor Richard says; and indeed so does he that lends to such people, when he goes to get it again. Poor Dick farther advises, and says,

"Fond pride of dress, is sure a curse,
Ere fancy you consult, consult your purse."

And again, "pride is as loud a beggar as want, and a great deal more saucy." When you have bought one fine thing, you must buy ten more, that your appearance may be all of a-piece; but poor Dick says, "it is easier to suppress the first desire, than to satisfy all that follow it;" and it is as truly folly for the poor to ape the rich, as for the frog to swell in order to equal the ox.

"Vessels large may venture more,
But little boats should keep near shore."

It is, however, a folly soon punished; for, as poor Richard says, "pride that dines on vanity, sups on contempt; pride breakfasted with plenty dined with poverty, and supped with infamy." And, after all, of what use is this pride of appearance, for which so much is risked, so much is suffered? It cannot promote health, nor ease pain: it makes no increase of merit in the person; it creates envy, it hastens misfortune.

'But what madness must it be to *run in debt* for these superfluities? We are offered by the terms of this sale six months' credit; and that perhaps has induced some of us to attend it, because we cannot spare the ready money, and hope now to be fine without it. But ah! think what you do when you run in debt; you give to another power over your liberty. If you cannot pay at the time, you will be ashamed to see your creditor, you will be in fear when you speak to him, when you will make poor pitiful sneaking excuses, and by degrees come to lose your veracity, and sink into base, downright lying; for, "the second vice is lying; the *first* is running in debt," as poor Richard says; and again to the same purpose, "lying rides upon debt's back;" whereas a free-born Englishman ought not to be ashamed nor afraid to see or speak to any man living. But poverty often deprives a man of all spirit and virtue. "It is hard for an empty bag to stand upright." What would you think of that prince, or of that government, who should issue an edict forbidding you to dress like a gentleman or gentlewoman, on pain of imprisonment or servitude? Would you not say, that you were free, have a right to dress as you please, and that such an edict would be a breach of your privileges, and such a government tyrannical? And yet you are about to put yourself under the tyranny, when you run in debt for such dress! your creditor has authority, at his pleasure, to deprive you of your liberty, by confining you in a gaol for life, or by selling you for a servant, if you should not be able to pay him. When you have got your bargain, you may, perhaps, think little of payment; but, as poor Richard says, "creditors have better memories than debtors; creditors are a superstitious sect, great observers of set days and times." The day comes round before you are aware, and the demand is made before you are prepared to satisfy it; or, if you bear your debt in mind, the term, which at first seemed so long, will, as it lessens, appear extremely short; time will seem to have added wings to his heels as well as his shoulders. "Those have a short lent, who owe money to be paid at Easter." At present, perhaps, you may think yourselves in thriving circumstances, and that you can bear a little extravagance without injury; but

"For age and want save while you may,
No morning sun lasts a whole day,"

Gain may be temporary and uncertain, but ever, while you live, expense is constant and certain; and, "it is easier to build two chimneys than to

keep one in fuel," as poor Richard says; so, "rather go to bed supperless than rise in debt."

"Get what you can, and what you get hold,
'Tis the stone that will turn all your lead into gold,"

And when you have got the philosopher's stone, sure you will no longer complain of bad times, or the difficulty of paying taxes.

'IV. This doctrine, my friends, is reason and wisdom; but, after all, do not depend too much upon your own industry, and frugality, and prudence, though excellent things; for they may all be blasted, without the blessing of heaven; and therefore ask that blessing humbly, and be not uncharitable to those that at present seem to want it, but comfort and help them. Remember, Job suffered, and was afterwards prosperous.

'And now, to conclude, "experience keeps a dear school, but fools will learn in no other," as poor Richard says, and scarce in that; for, it is true, "we may give advice, but we cannot give conduct:" however, remember this, "they that will not be counselled cannot be helped;" and farther, that "if you will not hear reason, she will surely rap your knuckles," as poor Richard says.

Thus the old gentleman ended his harangue. The people heard it, and approved the doctrines, and immediately practised the contrary, just as if it had been a common sermon, for the auction opened and they began to buy extravagantly. I found the good man had thoroughly studied my almanacs, and digested all I had dropped on those topics during the course of twenty-five years. The frequent mention he made of me must have tired any one else; but my vanity was wonderfully delighted with it, though I was conscious, that not a tenth part of the wisdom was my own, which he ascribed to me, but rather the gleanings that I had made of the sense of all ages and nations. However, I resolved to be the better for the echo of it; and, though I had at first determined to buy stuff for a new coat, I went away, resolved to wear my old one a little longer. Reader, if thou wilt do the same, thy profit will be as great as mine.

I am, as ever, thine to serve thee,
RICHARD SAUNDERS.

From the Farmers' Cabinet.

INDUSTRY, PROMPTNESS AND PUNCTUALITY, CROWNED WITH SUCCESS.

Stephen Girard, the great merchant and banker, was also a great and successful farmer. He owned a farm of several hundred acres of land within a few miles of Philadelphia, the cultivation of which he superintended with his usual industry and acuteness. This farm was his principal hobby; for every day, at one o'clock precisely, his gig was in waiting for him at his counting-house door, and as soon as the clock struck one he started for his farm in the Neck, not suffering any matter whatever to interfere with his daily visit. During the afternoon he gave his personal attention to the various agricultural affairs requiring it, plying his own hands to any and every kind of business that was in season. In the evening he returned to the city to lodge, and the return of day light, the next morning, would find him again engaged in the labors of his farm, which he would intermit so as to be in the city by nine o'clock to attend to his extensive and well managed commercial and banking concerns, and at one o'clock he was again on his way to his farm. He followed out this routine for twenty or thirty years, permitting no part of his business to suffer from neglect or want of attention. His farm presented a perfect model for imitation. His grain fields, grass grounds, orchard, and garden exhibited the most luxuriant and perfect appearance, while his stock of every kind, and poultry in all their varieties, were the finest and most perfect that were to be found in the country.

A distinguished foreigner, then resident in this country, on a particular occasion, had some special financial business to transact with the great banker, and 12 o'clock was fixed upon for making his visit for that purpose, but he did not arrive till the clock had struck one, he was too late, the great banker was gone to his farm, and he followed after; on his arrival he was kindly and courteously received; he was waited on over the farm and through the barn-yard, but not a word could be extracted from Mr. Girard on the subject of his mission. He could now think or talk of nothing but agriculture and rural affairs, and his friend had to return to the city and learn to be more punctual to his engagements in future.

On an occasion, many years since, the city authorities were making an improvement at Market street wharf, and there was a large quantity of rich earth, that had been accumulating there for a long series of years, to be removed, and any person was permitted to haul away as much of it as he chose without charge. It was deemed a good compost or manure, and no person knew better the value of manure than the rich merchant: he soon had his team at work removing it to his farm; an acquaintance of his who saw him superintending his work, remonstrated with him on account of the avidity and industry with which he engaged in what his friend thought so small a concern;—"Oh," says he, "Mr.——, I work to-day, if I die to-morrow." S.

From the Farmers' Cabinet.

LIME—ITS APPLICATION, &c.

On looking over the 43d No. of the Farmers' Cabinet, I find some information is elicited from me relative to the application of lime and manure, &c. "How the lime is applied? the quantity per acre? the quality of the lime? and the nature and constitution of the soil to which it was applied."

In reply to the above queries, I may state that (with one exception) for the purpose of *improving* poor land so as to produce good crops, with as little delay as possible, I have thought it best to combine the lime and manure, by applying both for the same crop; that is, in preparing for a crop of corn I should put on about 25 ox cart loads of barn yard manure to the acre, spread it evenly and plough *late* in the fall, harrowing it well before winter sets in. In the spring I spread on sixty bushels of lime to the acre, again harrowing until the ground is in good order for planting, it is then struck out lightly for planting, so as not to turn up the sward, nor is it my wish in the culti-

vation of the corn crop through the summer to plough so deep as to disturb the manure, preferring that it should decompose without exposure to the sun and rain. By this means it is (I believe) in a better prepared state for the wheat crop that follows. After the corn crop is taken off, I have the ground ploughed deep so as to mix the manure well with the earth, sow broadcast and harrow in. By this course I have raised from sixty to seventy bushels of corn per acre the first year, and from twenty-five to thirty bushels of wheat, following the corn crop, and from land that would not previously produce oats worth cutting. I prefer ploughing in the fall as above stated, under the impression that the eggs of insects previously deposited are in a measure destroyed by being exposed to wet and frosts of winter. By adopting this course I have never had my corn injured with the cut worm—some farmers are opposed to ploughing in the fall, because (as they say) the ground becomes grassy and difficult afterwards to keep under—this I know by experience is the fact, and the reason is a want of proper attention on the part of the farmer—if he will harrow his ground *well* directly after it is ploughed, and again in the spring, he will not be troubled with grass—at least I find it so. In harrowing in the spring, I place a weight on so as to loosen the ground to the sward, or as deep as can conveniently be done; the ground by this means is placed in good order not only for covering the corn, but gives room for the easy spreading of its fibrous roots while young and tender, and of course comes up better and stronger than when the ground is not well pulverized.

In the exception alluded to above, the lime was applied by itself, not having any manure to spare at that time. It was a lot of eleven acres of poor worn out land, and not wishing that it should lie useless, I concluded to try the effects of lime by itself—for this purpose I had the ground prepared and ploughed in the spring, and understanding that poor land would not bear much lime, I determined to ascertain that fact for my own satisfaction. I commenced putting on at the rate of one hundred bushels of fresh valley lime per acre, gradually reducing; finished at sixty bushels—the lime was slacked, and spread immediately and sown with oats, harrowing it in. The crop was unusually large, and had to be cut with the naked scythe, being all laid, (or lodged.) Where the most lime was put the crop was best, and so continued to produce in succeeding crops for many years afterwards.

The lime used in the *improvement* of my farm was from the Great Valley (in Pennsylvania) near Downingtown, which is considered of good quality for land. Of late years I have used oyster shell and Schuylkill lime—the former I have had burnt on the farm, having a kiln for that purpose. The refuse wood only is used, say at the rate of 1½ cords for 600 bushels of lime—the cost when burned does not exceed eight cents per bushel—the quantity per acre, from 150 to 200 bushels, the latter quantity I consider fully equal to 100 bushels of stone lime, and the cost less, having to give with us 25 cts. for the Valley lime. Schuylkill can be had for 17 cts. burnt with coal, or 20 cts. burnt with wood, but it is generally too much slacked by the time it reaches us, and in some instances (on being analyzed) is found to contain too great a proportion of magnesia. It would be well for our agricultural societies to turn their attention to this subject, and publish the result of their labors.

The farm on which I reside is of primitive formation—situation high—the soil naturally poor, composed of clay, sand and gravel, varying as to mixture more or less in the different fields.

EDWARD TATNALL.

Brandywine, 10th mo., 9th, 1830.

Extract From the Edinburgh Farmers' Magazine.

EARLY SOWN GRAIN HAS LESS STRAW, COMPARED TO THE GRAIN, THAN LATE.

Early sowing produces less straw than late sowing, and that in exact proportion to the times (cæteris paribus).—The knowledge of this principle which has not been discovered, at least not attended to, till within the last twenty years, is of much importance to the farmer. Before it was known and practised, the hazard of sowing land in a very high state of cultivation was very great, Oats or barley sown in such condition, at the usual period of seed time as formerly, viz. oats, late in March, and barley about the term of Whitsunday, would have been often entirely ruined by being too strong. English barley (commonly from Lincolnshire) and Dutch and many other early kinds of oats, were adopted without changing the time of sowing: and as these have a tendency to produce shorter straw, they were found of much advantage in securing a full crop without lodging. But it is found that any of our oats sown early, produce a shorter and stiffer straw, which has the same effect. Early oats, however, are still much in vogue. The Lincoln barley is almost out of repute. It is well known to some farmers, that the common Scotch barley is the best substitute for it—as, when sown early, its straw becomes shorter, much stiffer, and less apt to lodge. Potato oats are a new species introduced within these very few years; and are said to be natives of South America. It appears they were first imported into some of our Midland counties of Scotland, in a quantity extremely small; and that they obtained that name from the circumstance of their arriving in a *package of potatoes.* This is a valuable kind of oats in point of meal, yielding two to three pecks per boll more than the Angus, which, in every other respect, we reckon our best oats. They appear to be again losing ground in the estimation of some people. They are more apt than any other kind to keep the soil, like wild oats, and thereby to annoy the succeeding crops. It seems to be apprehended that, were they to be frequently shaken and ploughed in dry, that they would be as a great a weed too. They seem to have another disadvantage, which in the present circumstances of our labor, is not a small one. They ripen along with the wheat; and that article being now more than ever the chief object of the farmer, it is in danger of occasioning very serious consequences as to the timeous cutting of that crop. Potato oats are also extremely apt to shake, and seldom fail to drop in shearing. All kinds of early oats are

fit only for fine land, or land in a high state of cultivation; but upon inferior land, they are the best when a bad season has thrown the seedtime too far back for common ones. Blainsley oats are our native early, and have a finer meal as well as finer straw; but they seem mostly out of favor at present. These several varieties of oats and barley afford the farmer great advantages in securing his grass-seeds, as well as his corn crop, in certain seasons and situations.

From the Farmers' Cabinet.

COOKING GRAIN FOR STOCK.

In compliance with the suggestions made in the Cabinet, several farmers have procured and put up large boilers for the purpose of cooking corn and other grain for their stock, and so far as trial has been made, it answers expectation fully. In one case two bushels of the hard Dutton corn was subjected to the operation of cooking for several hours, until it was fully expanded; it was then measured accurately, and it was found to have increased in bulk to five bushels and half a peck. This was a greater increase than was anticipated, and it is thought that the softer, lighter kinds of corn would not increase so much, perhaps not more than double, but trial has not yet been made of it.

A cask perforated with holes in the bottom, it is found, may be placed on the top of the boiler, and filled with pumpkins or potatoes, and the steaming of them may go on at the same time that corn, buckwheat, or oats is cooking in the boiler below. One farmer has adopted the plan of breaking the ears of corn into pieces three or four inches long, and then boiling or cooking them without shelling, and in that way feeding corn and cob together: his success so far in feeding some fattening cattle has been very satisfactory and encouraging.

In order to economize fuel and to procure the full effect of the heat, it is very important to have a grate under the fire, with a door to shut close where the fire is put in, so that air to supply the fire may pass in under the grate only, for where a fire is supplied with air, which passes between it and the boiler, it is constantly carrying the heat up the flue, and tends to keep the boiler cooler than it ought to be from the quantity of fuel consumed; but when the air has to pass through the fire from below, it is thoroughly heated before it comes in contact with the boiler. After the fire has burnt down so as not to need ventilation for the smoke, the flue or pipe should be closed above, and the access of air under the grate prevented by a suitable stopper or door; this prevents the circulation of cold air from conveying off the heat from the brick work and boiler, and the process of cooking will be carried on for hours after the fire has burnt down, provided the access of cold air is prevented. The fire-place should not be made larger than that of a small stove, and the brick work should be brought pretty well up to the boiler, leaving but a small space around it for the smoke to pass up. A boiler of the kind referred to, is of good value to a farmer for other purposes than cooking grain, and one of them ought to be put up on every farm in the country, and to be considered as much a fixture as a corn crib or pig pen.

B.

From the Connecticut Courant.

EGGS AND POULTRY.

Among all nations, and throughout all grades of society, eggs have been a favorite food. But in all our cities, and particularly in winter, they are held at such prices that few familes can afford to use them at all; and even those who are in easy circumstances, consider them too expensive for common food.

There is no need of this. Every family or nearly every family, can, with very little trouble, have eggs in plenty during the whole year; and of all the animals domesticated for the use of man, the common dunghill fowl is capable of yielding the greatest possible profit to the owner.

In the month of November, I put apart eleven hens and cock, gave them a small chamber in a wood house, defended from storms, and with an opening to the south. Their food, water, and lime, were placed on shelves convenient for them, with warm nests and chalk nest-eggs in plenty. These hens continued to lay eggs through the winter. From these eleven hens I received an average of six eggs daily during the winter; and whenever any of them was disposed to set, viz. as soon as she began to cluck, she was separated from the others by a grated partition, and her apartment darkened; these cluckers were well attended and well fed; they could see and partially associate through their grates with the other fowls, and as soon as any of these prisoners began to sing, she was liberated, and would very soon lay eggs. It is a pleasant recreation to feed and tend a bevy of laying hens; they may be tamed so as to follow the children, and will lay in any box.

Egg shells contain lime, and in winter, when the earth is bound with frost or covered with snow, if lime is not provided for them, they will not lay, or if they do, the eggs must of necessity be without shells. Old rubbish lime, from old chimneys and old buildings, is proper, and only needs to be broken for them. They will often attempt to swallow pieces of lime plaster as large as walnuts.

I have often heard it said that wheat is the best grain for them, but I doubt it; they will sing over Indian corn with more animation than over any other grain. The singing hen will certainly lay eggs, if she finds all things agreeable to her; but the hen is much of a prude, as watchful as a weasel, and as fastidious as a hypocrite; she must, she will have secrecy and mystery about her nest; all eyes but her own must be averted; follow her or watch her, and she will forsake her nest, and stop laying; she is best pleased with a box covered at top with a backside aperture for light, and a side door by which she can escape unseen.

A farmer may keep a hundred fowls in his barn, may suffer them to trample upon and destroy his mows of wheat and other grain, and still have fewer eggs than the cottager who keeps a single dozen, who provides secret nests, chalk eggs, pounded brick, plenty of Indian corn, lime, water and gravel, for them; and who takes care that his hens are not disturbed about their nests. Three chalk eggs in a nest is better than a single nest egg, and large eggs please them; I have often smiled to see them fondle round and lay into a nest of geese eggs. Pullets will commence laying earlier in life where nests and eggs are plenty, and where other hens are cackling around them.

A dozen dunghill fowls, shut up from any other means of obtaining food, will require something more than a quart of Indian corn a day; I think fifteen bushels a year a fair provision for them. But more or less, let them always have enough by them, and after they have become habituated to find enough, at all times a plenty in their little manger, they take but a few kernels at a time, except just before retiring to roost, when they will take nearly a spoonful into their crops; but just so sure as their provision comes to them scanted or irregularly, so surely they will raven up a whole crop full at a time, and will stop laying.

A single dozen fowls, properly attended, will furnish a family with more than 2,000 eggs in a year, and 100 full grown chickens for fall and winter stores. The expense of feeding the dozen fowls will not amount to 18 bushels of Indian corn. They may be kept in cities as well as in the country, and will do as well shut up the year round as to run at large; and a grated room, well lighted, ten feet by five, partitioned from any stable or other out-house, is sufficient for the dozen fowls, with their roosting place, nests and feeding troughs.

At the proper season, viz. in the spring of the year, five or six hens will hatch at the same time, and the fifty or sixty chickens given to one hen. Two hens will take care of 100 chickens well enough, until they begin to climb their little stick roosts; they should then be separated from the hens entirely; they will wander less, and do better away from the fowls. I have often kept the chickens in my garden; they keep the May bugs and other insects away from the vines, &c.

In cases of confining fowls in summer, it should be remembered that a ground room should be chosen: or it will do just as well to set into their pen boxes of dried sand, or kiln-dried, well pulverized earth, for them to wallow in, in warm weather.

From the Edinburgh Farmers' Magazine.

UTILITY OF THE BRITISH COUNTY AGRICULTURAL REPORTS.

Extract from the address of Sir John Sinclair to the Board of Agriculture.

County reports.—The idea of ascertaining the agricultural state of every district in the kingdom, and of printing each survey, according to one uniform model, is the greatest undertaking ever attempted by any institution; and, though carried on with funds extremely inadequate to such an attempt, yet it is at last in a fair way of being happily accomplished. All the counties in England will be completed in the course of this year. Several will remain to be done in Scotland, for the execution of which fit persons can be procured, as soon as adequate funds are obtained for that purpose. In the course of this year, five reports have been already printed, and eight transmitted to the board in a state ready for publication; so that the progress has been considerable, and the termination of this most important undertaking, by which so large a proportion of the funds of the board has hitherto been absorbed is probably at no great distance.

The advantages to be derived from these reports, are universally recognized in foreign countries; for the same plan has been already adopted in France and Russia, and will probably be imitated in every other civilized country. A letter has lately been received from a celebrated agriculturist in France, in which he states his opinion, 'that such a measure is the most useful that can be undertaken, for bringing, in a short space of time, agriculture to a high degree of perfection.'* Indeed the information furnished by the various reports and communications published by the Board, far exceeds what is generally apprehended. Dr. Coventry, Professor of Agriculture in the University of Edinburgh, who from his situation, is led to examine every work connected with the subjects on which he lectures, has recently declared, 'that in these late reports and publications, there is detailed more useful and distinct information, on various branches of agriculture, and on rural concerns in general, *than was in print before these were drawn up.*'† What then may not be expected, when all these reports are completed, for little more than one half of them were printed, when this idea of their merit and utility was formed by Dr. Coventry.

REMARKS ON THE CULTURE OF THE MORUS MULTICAULIS, AND ON SILK-CULTURE.

To the Editor of the Farmers' Register.

December 14th, 1838.

Dear Sir—I take the liberty, through the columns of your valuable journal, to offer to the growers of the morus multicaulis a suggestion, which, if attended to next season, will save many young trees from destruction, and, if neglected, more I fear will be lost, than can well be spared. The management of about 60,000 trees having devolved on me the past summer, and it being an entire novelty, I was induced to observe, with minute attention, the peculiarity of their growth, and to note carefully the best mode of working them. The caution I am about to give, is, therefore, the result of experience, and some little practical knowledge of the subject. It has been said, that the cultivation of the mulberry is precisely similar to the cultivation of Indian corn; this, in the outset of its tillage, is an error, and proved so fatal a one to me, that I lost several thousand young trees before I found it out. There is no plant more delicate and tender than the young mulberry, and none that requires, at the period of its germination, a nicer and more cautious management. The perennial grasses and weeds, which, in early spring, shoot up on the most highly cultivated spots, give an immediate check to its growth, and unless removed, would speedily destroy it. To free it from this evil, without injury to the young plants, is the desideratum; and as hand-weeding (on a large scale) is inadmissible, the hoe is usu-

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* The French expressions are, 'Je crois que ce travail est le plus utile de tout ceux qu'on peut entreprendre, pour amener, dans un tres court espece de temps, l'agriculture à un grand degrè de perfection.'

† See Discourses explanatory of the Object and Plan of the Course of Lectures on Agriculture and Rural Economy, by Dr. Coventry, 1 vol. octavo, printed at Edinburgh, 1808, p. 187.

ally employed to cleanse the crop. I found that instrument, (although placed in very careful hands,) far more destructive to the trees, than either grass or weeds. You are aware, that the cutting germinates by throwing out from its extremities small and delicate roots, at first not larger, and more brittle, than the finest cambric thread; before these are strong enough to sustain themselves, the slightest touch or even jar from the hoe, will snap them asunder; when the recuperatory process, (especially in dry weather,) is so slow, that the plant perishes before it can take root again. To avoid this danger, I would recommend, as a substitute for the hoe, an instrument made similar to a pitch-fork, but having a sharp blade, in lieu of prongs; or, if economy is to be considered, an implement used by the old fashioned Virginia gardeners for weeding gravel walks, which is nothing more than a foot or two of an old scythe blade, somewhat bent to make the edge cut upwards, and fastened, midway its length, to the handle of a rake or hoe, would be equally efficient. With such a hand-skimmer, the plants can be rapidly weeded without danger of disturbing them—but whatever substitute may be considered best, I can only say, that experience has taught me that the hoe cannot be used in the field culture of mulberries without great risk, until the roots attain strength enough to resist a blow from it. In conversation the other day, on the subject of the morus multicaulis, (the prevailing topic of the day,) with an eminent eastern culturist, he informed me of a practice successfully followed by him, which appears so plausible, that I propose the next year to adopt it. If it does no good, it at least has the negative merit of doing no harm, and is therefore worthy of trial. My informer, (who is, by the way, a most respectable man, and well versed in his vocation,) says, that it has been his custom, when preparing his cuttings for planting, "to make an incision through the bark from one extremity of the cutting to the other, taking especial care not to wound the bud—the result was, that from each side of the incision roots were thrown out as well as from the extremities, thus materially aiding the growth of the tree and greatly tending to its preservation, as every new root gave an additional assurance of its living. This fact, if not erroneous, and I see no reason to doubt it, would be especially advantageous with one-bud cuttings.

While on the subject of the Chinese mulberry, I trust it will not be trespassing too far on your time and patience, to hazard a speculation as to their present extravagant value, its tendency, and probable result. That no prudent man will, or ought to purchase trees at present high prices, with a view to engage in the culture of silk, is obvious to all—and that the mulberry must in a year or two depreciate, as an article of speculation, and be only sought for as the means of making silk, is likewise susceptible of demonstration. The temptation, however, offered by the hope of a continuance of high prices, and the prospect, (however dark it may be) of realizing great profits from the sale of trees, having induced many of our most intelligent and wary farmers to engage largely in their cultivation, is, I think, a most fortunate circumstance, and will eventuate most happily for the state, by opening a source of wealth equally as abundant, and more beneficial, than ever was her tobacco trade. Nothing but this unaccountable *morimania* (if I may coin a word) could have aroused attention and stimulated inquiry into the nature and practicability of growing silk in the United States. Committees of Congress might have issued reports, and writers on silk have published volumes on the subject; but our apathetic brethren of the plough would not have read either, or given a passing thought to the matter, until awakened by the astounding fact, that a shrub six or seven feet high, raised in eight months, from a cutting six inches long, actually sold for, and *was worth* a silver dollar. This came home—curiosity and inquiry are now on the "qui vive"—and now is the accepted time for the friends of the silk business to strain every nerve to push forward its introduction. This humbug, as it is called, even by those who have been seduced into it, is certainly the most fortunate delusion that ever arose in Virginia; it is the inscrutable working of Providence to convey a blessing, which is destined to redeem this ancient commonwealth from the state of decay into which she is rapidly falling; and when the bubble of high prices for trees shall burst, as soon it must, the question will then be presented to the agriculturists, who have engaged in it from motives of speculation, and are left in the lurch—what is to be done with the stock of trees on hand, for which there is no market? Are they to be dug up and thrown away, or shall they be used for feeding silk-worms? It is not difficult to anticipate the solution self-interest will give to this query. The farmer has but to learn the fact, that in conducting this new business (for which his soil and climate are peculiarly adapted) not a single efficient laborer will be abstracted from his farm—that his barns and other buildings, (not in use during the short feeding season) will, (for want of better) answer as laboratories—that he has on hand abundant food for his worms; and above all, that the product of his care and attention will find a ready market at his door. Moreover, to give it a political cast, this grave fact is worthy the consideration of the patriotic farmer, as well as the statesman and political economist. The market in Europe for raw and manufactured silks, exceeds forty millions, and in the United States twenty millions of dollars; and to this amount are we tributary to semi-barbarous Hindoos, indolent Turks, and imbecile Italians. Now, Mr. Editor, is the auspicious moment to draw the attention of the agricultural portion of the community to this important subject. To do this effectually, permit me respectfully to suggest the creation of a state society for the encouragement of silk-growers. Such an association, with an active, influential president at his head, with its committees of correspondence, premiums, &c., would do much towards exciting attention, disseminating information, and, finally, would pave the way for the introduction of silk-making, as one of the ordinary occupations of every farm. Had I the talent of an essayist, the field is most ample, and it might be indulged to satiety; but as I do not possess it, I will close this (as you perceive) hastily written and imperfect epistle, satisfied that in leaving the subject with you, I place it in far abler hands. I am, respectfully, &c. T. M. R.

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From the Edinburgh Farmers' Magazine.

ON THE USE OF SOAP-MAKERS' WASTE ASHES, COMMONLY CALLED SOAPERS' WASTE, AS A MANURE.

Drawn up by order of the Board of Agriculture, and published by its direction.

Introduction.—The Board of Agriculture having found, upon inquiry, that the produce of soap-makers' waste ashes, in London and its immediate neighborhood alone, amounts to above 20,000 tons *per annum*, and is likely to increase, more especially from the use of kelp having been lately introduced into the London market, which furnishes a greater quantity of refuse ashes; and being convinced, from the most accurate information, and the experience of many of its members, that this quantity of valuable manure, if brought into more general use than has hitherto been the case, would be an object of considerable importance to the national agriculture, are desirous of giving all the publicity possible to a circumstance so well deserving the attention of farmers, gardeners, hop-planters, nurserymen and others employed in the cultivation of the soil, more especially those in the neighborhood of the metropolis, and on the borders of the navigations therewith connected; and, with that view, have resolved to circulate the following observations, collected from the best information which it has hitherto been in the power of the board to obtain.

Sort of ash.—The great distinction to be found in soap-ashes, depends upon the sort of alkaline salt used by the soap-boiler. When kelp and barilla are the materials, the ashes are found to be more than twice as strong and effective as a manure, than such as are the refuse of common potash; and to this circumstance may be attributed, not only the different quantities per acre that are recommended, but also the different results which have attended the use of this dressing in different parts of the kingdom, and any failures which may have taken place. The ashes to be procured at London are all made from barilla and kelp.

Analysis.—Mr. Davy analyzed two specimens of soapers' waste (sent him by Mr. Hawes), in the laboratory of the Royal Institution, and the following was the result.

The waste from barilla gave, in 100 parts,—

Of carbonate of lime, about 76 }	
Of quick-lime, about 15 }	
Total calcareous matter, ———	91 parts.
Of gypsum, about - - -	5
Of common salt - - -	1½
Of carbonate of soda - - -	1¼

The waste from kelp, in 100 parts, gave about 94 of calcareous matter, in the same state as that from barilla; about three of gypsum, and one and a half of soluble saline matter, containing, apparently, nearly the same proportions of carbonate of soda, and of common salt, as in the former instance.

It is obvious, from the chemical nature of soapers' waste, that it will be applicable wherever calcareous matter is wanted in lands, and that it will serve the purposes of liming.

The small quantity of alkaline salt and of gypsum that it contains, will likewise render it much superior to common calcareous matter, as a top-dressing for every kind of grass.

It seems probable, that these ashes will be found of most benefit on soils that abound largely with undecomposed vegetable substances, upon which the alkaline salt will act powerfully. Charcoal also, wherever found, may be rendered miscible with water, which will produce a considerable effect. The ashes proving highly beneficial on peat-moss, and on low spongy meadows, seems to be a confirmation of this fact. On calcareous soils they may not produce an equal result, as one third of the mass of these ashes is composed of lime. They can scarcely be recommended on dry burning sands.

Such farmers as are in the habit of making composts, will probably use these ashes as a material in forming the heaps; and so far as earth is concerned, there can be no objection to the practice; but, in respect of dung, it may admit a doubt. In proportion to the quantity of alkaline matter left in the ashes, it will tend to shorten the duration of the effect of the dung; and as the addition of ashes will render stirring and mixing necessary, it merits consideration, whether the better system be not to use these manures separately. It seems advisable, in the application of these ashes to arable crops, to sow and harrow them in previously to sowing the seed, which will prevent the action of any acrid or caustic quality on the germination of the young plants. The same circumstance will point out the autumn as the proper season for applying them on grass lands, though experiments may be tried with them early in spring. Mr. Hawes, from the information which he has received, particularly from Liverpool, where they are eagerly sought after, states, that they are mixed with pond, ditch, and river mud, and used in about four months. This also agrees with the practice of Robert Thornton, Esq. of Clapham, who has used them about four years, and has thereby greatly improved a very sour pasture. In Cheshire they plough them into the land; but an Essex farmer remarks, that these ashes are of so heavy a quality, that the tillage should be shallow.

Effect.—In Surrey, these ashes have been found infallibly to kill insects, (*Malcolm's Comp.* vol. ii. p. 173.) The effect of these ashes admirable both on grass and arable (*Adam's Essay on Agriculture*, vol. i. p. 167.) Destroys slugs and vermin of every description (*Museum Rusticum.*) Mr. Mansfield, near Epping, on a poor sour pasture that would not mow, nor would stock eat it, four wagon-loads per acre effected a total change; soil strong, wet, and heavy (*Essex Rep.* vol. ii. p. 246.) Mr. Sherwood, of Abbots-Langley, Herts, has used these ashes with very great success mixed in composts. They are very serviceable in new plantations, particularly where the soil is cold. A noble lord, a member of the Board of Agriculture, possesses a grass field in Wiltshire, which was manured with soap-ashes near twenty years ago, and the improvement was very great, and has continued so ever since. Two principal farmers near Ealing, Mr. Thorne and Mr. Knivett, have used them for many years for arable land, with great success and advantage. Robert Thornton, Esq. of Clapham, in some experiments amounting to seven acres, found that these ashes added a load of hay per acre to the crop. The Marquis of Abercorn's bailiff says, his father always considered one load of soap-

ashes equal to five loads of rotten dung, and particularly improved the soil and verdure. The Reverend Mr. Dudley formed, in Essex, composts of these ashes with marsh banks, which were mixed well together, and spread on grass land with great effect. Hence there is considerable reason for believing, that there is scarcely a manure to be procured, that will be found so profitable (price considered) as these ashes, and that the farmers in the vicinity of London, and of all the navigations leading from it, may embark largely in the use of this manure, without the smallest apprehension of loss by so doing; but that, on the contrary, they will find the profit decidedly great, and, by the use of them, may prevent the continual advance of all sorts of manure. Barges bringing lime, chalk, timber, bricks, malt, and corn to London, can get a freight back at twelve hours' notice.

Conclusion.—It is evident, from the preceding observations, that the use of soapers' waste is well known in various parts of the kingdom; but as the quantity of this valuable manure is likely considerably to increase owing to the more extended use of kelp in the soap manufacture, it would be desirable to have the following particulars ascertained, in a more satisfactory manner than hitherto has been the case.

1. The soils and the crops for which this manure is best calculated?

2. The quantity that should be laid on each per acre?

3. The proper period of the year for laying it on?

4. Whether any mixture should be used with soapers' waste—what is the best mixture—and the best proportions?

5. What are the effects of this article compared with other manures, and its relative value?

Any information regarding these particulars, transmitted to the Board of Agriculture, 32, Sackville street, London, will be particularly acceptable.

SOME ACCOUNT OF THE SILK CONVENTION.

To the Editor of the Farmers' Register.

In advance of a more detailed report, I propose to give you a sketch of the proceedings of the late National Silk Convention, which met in Baltimore, on the 11th of the present month.

The convention was a numerous and highly respectable and intelligent body of men, composed of delegates from a number of states. Judge Comstock, of Connecticut, was called to the chair—the duties of which he discharged with promptitude and ability. His long devotion to the objects which brought the convention together, entitled him to this mark of distinction; and the dignity and amenity of his manners fully justified the propriety of the choice.

Previous to the assembling of the convention, it was supposed by many persons, and feared by a still greater number, that it would be mostly composed of speculators in multicaulis, anxious to keep up the mania which has for some time past astonished the sober-minded portion of the community. It was thought that the ruling passion would be a desire to reap another harvest from the sale of plants, which have been sought after with an avidity proportioned to the high prices which have been demanded for them. But though there might have been, and probably were, some members of this description; yet the great majority consisted of persons anxious to promote the culture of silk, and to introduce a new and useful branch of industry into our young and thriving country. The indirect effect may, and no doubt will be, to extend the demand for the multicaulis; for the two cultures are inseparably connected; but if the multicaulis can be beneficially appropriated to its legitimate purposes, instead of being made an article of speculation, its merits will then be appreciated as an auxiliary to the silk culture; and, however extensive the demand may become, its value will no longer be factitious. This is certainly the basis on which it should be placed.

After the organization of the convention, a committee was appointed to suggest and introduce proper subjects on which its action should be had. These will appear at full in the journal of its proceedings, which will be published in the course of a few weeks. There was one subject, however, which gave rise to considerable debate, and indeed to some feeling, which it may not be improper to advert to. This was the propriety of adopting a standard reel, and recommending it to the silk-growers of the United States. The importance of this was first suggested by G. B. Smith; and upon his explanation, and that of others, it passed the committee with entire unanimity; but it was opposed in convention for a length of time, and at last was only sanctioned after some modification of the resolution. It was contended by the opponents of this measure, that it would be restricting the exercise of American ingenuity, which was believed to be fully competent to invent any machinery which the future wants of the silk-grower might require. The propriety of the recommendation, however, was fully sustained by Mr. Smith and other practical men, whose arguments, it is hoped, will be reported in full, as a stenographer took notes of the debate. The reel recommended was the *Piedmontese*, or any other combining the same principles and dimensions. And now, in the infancy of the business in this country, before we have any long-rooted prejudices to contend with; and with a view to the ultimate export of silk to Europe, it was the proper time to fix upon a standard. It was shown that before such standard was fixed in France and Italy, reels of various dimensions were in use—the result of which was so much confusion, that it was impossible manufactories could flourish. Until some specific principle was recognized in the construction of reels, no set of manufacturing machinery could be adapted to such a total want of uniformity as the raw material exhibited. At length, the subject was acted upon by the government, and the Piedmontese reel was adopted and the use of it enforced upon silk-growers by legal penalties. So accurate is this reel in its proportions, and so simple in its principles, that it was contended by Messrs. Smith, Whitmarsh and Cobb, all of whom had invented some modification of that reel, and by other gentlemen who had also been exercising their ingenuity in making improvements upon it, that the wit of man could invent nothing more simple or more perfect. The hanks reeled upon it are all of the same size; the threads of every skein are precisely of the same

length; the basin and furnace are at such a distance, that the silk becomes dry by the time it is wound on the reel; and by means of the traverse bar, each filament is laid on in such a manner that it never comes in contact with the preceding one, except in crossing it. A commodity is thus produced, which, in the factory is unreeled with the same facility that it was originally reeled, and without any loss to the manufacturer. An illustration of the importance of such a standard was happily adduced by Mr. Whitmarsh, who said that he recently saw a lot of silk in New York, of very superior quality, which was brought from Brussa near Constantinople, but for which no purchaser could be found, owing to the large size of the skeins. They were eight or ten feet in diameter, and so unwieldy that no machinery in this country could work it up.

One of the leading objects of the convention was to form a "National Silk Society," to hold its meetings annually at Philadelphia, Baltimore, Washington, or some other nearly central place. The next meeting is to take place in Washington, on the 2d Tuesday in December, 1839. All the members of the convention are entitled to membership in the national society, by the payment of one dollar per annum, or membership for life, by the payment of ten dollars at any one time; and, in future, members are to be admitted on the same terms on the recommendation of the executive committee. After the formation of the national silk society, and the appointment of the executive committee to prepare business for its action, a resolution was passed authorizing the establishment of a paper to be devoted to the silk culture, and to be called the "American Silk Journal." It is to be published in Baltimore, under the editorship of J. S. Skinner, Esq., so well and favorably known to the agricultural community, as the founder and editor of the old American Farmer. The first number will probably be issued during the winter; and as the members of the silk society will make it the medium of their communications on the subjects to which it is devoted, and as it will possess facilities for concentrating silk intelligence which no other paper perhaps can enjoy in the same degree, it is anticipated that its circulation as well as usefulness will be very extensive. It will probably be a monthly of 16 to 32 pages, at one dollar per year. The surplus funds, after paying the printer and paper maker, will, in the form of premiums, be devoted to the encouragement, under proper regulations, of experiments going to establish the value and practicability of various branches of silk industry. The question, however, whether there would be any "surplus funds," and, consequently, whether this mode of encouragement would not be very likely to fail, formed the subject of considerable discussion in the committee, as well as in the society. And to remove all doubt on the subject, and to attain the ends which the committee had so anxiously in view, a liberal and very responsible gentleman of Massachusetts authorized the committee to draw upon him for the amount of any deficiency which might be found to exist. The certainty, therefore, that liberal premiums will be offered in a short time, will serve, it is hoped, to stimulate many competitors to enter the lists, not only from the north, but the south also—where, if we have the disadvantages of inexperience, we have greatly the advantage in climate. If, in this laudable contest, a generous spirit of emulation should be excited throughout the country, a variety and extent of information will be elicited, which will be interesting not only to silk-growers, but to the community at large—and which will serve to dispel all doubts in regard to the value of the silk-culture.

In addition to the establishment of a journal and the publication of the proceedings, it was ordered that an address to the people of the United States be published, the preparation of which was entrusted to an able committee, of which Mr. Smith, of Baltimore, is chairman. From the character of Mr. Smith, as well as that of the other members of the committee, the public may expect not only a well written document, but one, in the arguments and statement of which, every reliance may be placed.

The subject of bounties offered by the state legislature was also discussed, and a resolution was passed, recommending the propriety of applications to that effect, in states where no encouragement has yet been given to the silk culture. It was conceded, on all sides, that it would be improper and inexpedient to make any application to Congress; and, amongst other considerations, perhaps not the least forcible which operated against an adjournment of the convention to Washington, was an apprehension, that it might be supposed there was a desire to solicit congressional action in furtherance of their object. But, whilst the propriety of congressional legislation was repudiated, the propriety and beneficial effects of state encouragement were concurred in with great unanimity. Not that the silk-culture is supposed to stand in need of permanent fostering and propping up; but now, in the infancy of the business, when there is not sufficient skill and experience in the country to insure, in all cases, successful results, it would be manifesting nothing more than a paternal regard for the promotion of important interests, if state governments were to enact such bounties as would provide against the discouragements of total or even partial failures. The operation of these bounties might and ought to be limited to a few years, by the expiration of which time, the necessary skill and information in conducting the business, would be acquired—and at the moment when the drafts on the treasury might begin to be felt, they would cease by limitation of the act. Such bounty laws have been passed by a number of state legislatures; and the good effects have been already felt in the attention and emulation which have been thereby excited, whilst the inconveniences to the state exchequers have been scarcely felt.

During one of the sessions of the convention, a resolution was offered in compliment to the pioneers of the silk culture; and particularly to G. B. Smith, whose services were admitted by all to be pre-eminent. This resolution was passed, not only with entire unanimity, but in a manner which must have been highly gratifying to the feelings of a man of Mr. Smith's disinterestedness and modest deportment. In connexion with this expression of gratitude, I take the liberty to advert to the deep interest which was manifested by many members of the convention, in the success of the "Smith fund," according to the proposition which you recently submitted in the

pages of the Farmers' Register. This was a subject which could not properly be brought before the convention; but at an informal meeting of many of its members, an opportunity was offered of presenting it to the public attention; and several influential gentlemen have undertaken to obtain subscriptions. A very important point was gained in giving it a start, and a handsome subscription was made in the course of a few moments. It is now hoped and believed that a considerable degree of success will attend the efforts of those who have interested themselves in the matter; and that the growers of the multicaulis, who have realized so much, either directly or remotely, by Mr. Smith's writings and exertions, may not now withhold the manifestation of their gratitude, which the occasion so happily offers. If the subject could only be presented in a proper point of view to each individual who has been engaged in the culture of the multicaulis, it can scarcely be supposed that he would withdraw from all participation in the offering which it is proposed to make. Many of those who have but recently engaged in the culture, may not so readily appreciate the obligations they are under to Mr. Smith, from the fact that he was strictly a pioneer in the business—and his peculiar merits, therefore, are in a great measure unknown to such as have no correct historical information of the early efforts to introduce the silk and multicaulis culture into this country. But that they are as much indebted to him as the cotton planters are to Whitney, or the country at large is to Fulton, can admit of no doubt. Mr. Smith is emphatically one of those benefactors, who, with entire disinterestedness, have devoted their energies to the public, rather than to their own particular welfare. Let not those then, who have profited by his labors—who have grown rich by his exertions and discoveries—who have reaped full and abundant harvests where he has sown the seeds; let them not in the "pride of life," forget the true author of their prosperity, and turn away from him, but for whom they might never have had their days of rejoicing.

During the recesses of the convention, there were several meetings of the members for the purpose of imparting and collecting information on the utility, advantages, and practicability of the silk-culture. These informal meetings admitted of such a latitude of discussion, such a free comparison of opinions, and practices, and results, that they were undoubtedly the most interesting and most valuable seasons which the members had the pleasure of enjoying. Those who possessed practical knowledge and wisdom, "freely gave,"—whilst those who were inexperienced, were eager to catch every word, and as "freely received." The capability of the country to produce silk of a superior quality—the relative value of the several varieties of mulberry and of silk-worms—the proper management of the latter—the practicability of rearing successive crops—the product per acre of raw silk—together with a history of the early efforts of some of the pioneers in the cause, were all enlarged upon in a manner satisfactory, impressive and frequently eloquent. In addition to which, there was a considerable exhibition of some very creditable silken goods and fabrics, manufactured from American silk during the past summer. It were wished that many others could have been auditors and spectators, on these interesting occasions. But the addresses of the various members who favored the company with their knowledge and experience, will no doubt be given very fully to the public in the report of the proceedings, which will shortly be ready for extensive circulation, and probably contained also in first number of the Silk Journal. In this expectation, there is no necessity, even if the occasion were favorable, to give even a brief abstract of the contents of the addresses.

On the whole, there is every reason to believe, that this convention will be productive of great good—that an impulse will be given to the silk-culture which will be more or less felt in the remotest parts of our country—and that it will form an epoch in the history of silk-culture, which may be remembered with emotions of satisfaction and even pride. Its practicability has been fully proved—our soil and climate have been shown to be eminently adapted to its success—and the superior intelligence of our people will no longer permit it to remain a mere matter of theory and speculation. Already have cautious and not visionary men, fixed upon the time when we shall have silk for commercial export—for it will be a much longer period before we shall have manufactories of our own for its various manipulations—and some of our contemporaries may live to see the day when we shall receive the splendid fabrics of Lyons and Spitalfields, in return for the raw silk of America. ——— ———.

AN ESSAY, PRONOUNCED BEFORE THE CUMBERLAND AGRICULTURAL SOCIETY, NOV. 30TH, 1838.

By William B. Smith, M. D.

"Can the culture of Tobacco be dispensed with in Eastern Virginia."

Mr. President, and gentlemen of the Cumberland Agricultural Society.—Before entering fully on the subject proposed, I shall take the liberty of giving a history of the tobacco plant, Nicotiana Tabacum, its medical use, &c.

Secondly, a short account of the tobacco culture in the West Indies, about the beginning of the seventeenth century.

Thirdly, the demoralizing effects of the culture of tobacco, as a staple in Virginia.

Fourthly, an attempt to prove that the time has arrived when we are under the necessity of giving up the culture of tobacco.

1st. Tobacco is an annual plant in Virginia, but in the West Indies and some parts of South America, two crops are taken from one planting. "Nicotiana Tabacum" is a native of America, and was first introduced into Europe, about the middle of the fifteenth century, or, to be more accurate, in the year 1540. Since that period, tobacco has been cultivated in various parts of Europe, for medical use, chewing, snuffing, and smoking. It has also been cultivated on the coasts of Asia and Africa; indeed we find the plant cultivated more or less throughout the whole world.

Large crops of tobacco are grown in the U. States, and exported to Europe annually. According to

the Philadelphia commercial list, October 13th, the stock of Kentucky and Virginia tobacco in Europe, on the 1st January, 1837, was 40,904 hhds. In 1838, 23,464 hhds., decrease 17,430. Stock of Kentucky and Virginia tobacco in the United States, 1st January, 1837, was 26,310 hhds., in 1838, 15,835 hhds., decrease 10,475 hhds. Total deficiency of stocks in Europe and the United States, of Kentucky and Virginia tobacco, January 1st, 1838—27,905 hhds. The quantity of American tobacco required by Europe annually is one hundred thousand hogsheads. Of this quantity, from thirty to thirty-five thousand hogsheads, are of the light descriptions, or Maryland and Ohio; consequently from sixty-five to seventy thousand hhds. of heavy or Kentucky and Virginia are required to meet the consumption in Europe."

Virginia has, for the last century, furnished the European markets with the richest and best tobacco, Maryland with the finest and most delicate of fibre, and the West Indies grow tobacco remarkable for delicacy of flavor. The leaves of a well-grown plant of Virginia tobacco, are from 2 to 3 feet long, of a pale green color when fresh; and when properly cured of a yellowish cast; having a strong narcotic smell and acrid burning taste. The active constituent or principle of the plant is an essential oil, obtained by distillation. When this oil is taken in the stomach or applied to the surface of the body, it produces nausea and vomiting; it often proves violently cathartic, attended with alarming vertigo, great debility and general relaxation.

The system, however, becomes easily habituated to the use of tobacco, and it is used in large quantities as a luxury, without experiencing any other bad effect than what arises from individuals being unable to relinquish its use, after the habit of chewing is formed. When chewed in substance, it causes an increased flow of saliva, and in many instances relieves sore eyes and tooth-ache. When reduced to powder and snuffed up the nose, it proves an excellent sternutatory. The tincture of tobacco acts powerfully as a diuretic and has proved successful in dropsy and dysuria. It is also applied externally for the cure of obstinate cutaneous diseases. In the form of smoke, and infusion, it has been used with great success by way of injection in obstinate constipation of the bowels, and in the reduction of scrotal hernia.

2ndly. As we are acquainted with the culture of tobacco, in Virginia, I will pass it by and give a short account of the West India culture, one hundred and forty years ago. I do this for the purpose of showing the great difference in the Virginia and West India mode of cultivation: the latter is cultivated with far less expense, inasmuch as it will be shown, that the tobacco crop in the West Indies requires no fire in the curing process.

"After sowing tobacco seeds, the ground is watered every day, and in hot weather covered to prevent its being scorched by the rays of the sun; and when the plants are grown to a certain pitch, they are transplanted into a soil well prepared for their reception: care is also taken to keep the ground clear of weeds, and to pull off the lower leaves of the plant, that fifteen of the finest leaves may have all the nourishment. When these leaves are ripe, which is known by their breaking when bent, the stalks are cut, and left to dry 2 or 3 hours in the sun; after which they are tied together two and two, and hung on ropes under the shade to be dried in the air: and when the leaves are sufficiently dried they are pulled from the stalks, and made up in little bundles; which being steeped in sea-water, or for want thereof, in common water, are twisted in manner of ropes, and the twists formed into rolls by winding them with a kind of mill around a stick: in which condition it is imported into Europe, where it is cut by the tobacconists for smoking, chewing, formed into snuff and the like."

3dly. I will now make some remarks on the demoralizing effects of the tobacco culture in eastern Virginia. What I might ask, has produced the wretched and deplorable state of things observation presents to our view in the tobacco region of Virginia? I speak with reference to the exhausted state of our farms; lands naturally the best in the world; have become worn and exhausted by the culture of tobacco. The bitter weed has laid the forest low and left us nothing but galls, gullies and dwarf pine! If our system of agriculture be correct, how does it happen that our lands have deteriorated; and how are we to account for the fact, that in the tobacco region of Virginia, we have much steril surface; one half being unfit for cultivation, and the other half affording a scant return to the agriculturist? Let those answer the question who have cultivated tobacco. The great object heretofore has been, to get as much forest cleared as possible, make a few crops of tobacco, to be followed with grain; until the soil by hard culture and frequent washings becomes exhausted, and the land abandoned. This Virginia can witness; the system, to say the least of it, is wasteful, unproductive and immoral. Cut down, wear out and walk off, has been the system pursued in the tobacco region for the last century. The cultivation of tobacco, has not only exhausted our lands; if this was all, we could bear it, but it has left us poor; its influence is felt in eastern Virginia, and extends to our slaves, horses, cattle, sheep and hogs, and I might say down to the cats and dogs. Our ridges have become so barren, that they do not afford cover for the partridges, and they have followed the soil down branches and creeks, hovering in the flats. We should all mourn over such a state of things. Poor old Virginia! She once stood high, the pride of man, the pride of fame; now fallen. She gave birth to all that was great and good in America, she gave birth to American liberty, history, eloquence and religious freedom, and shall Virginia, the mother of 25 states, the land of Washington, the boast of Jefferson, Monroe, Madison, Marshall, Henry and a host of worthies, be reduced by injudicious culture to a CAPUT MORTUUM? Her forest has been swept away, and her great men of genius and worth, together with the hard cultivators of the soil, the bone and sinew of the land, have, by thousands and tens of thousands, been driven out of the state, in search of better lands.

Where are the talented sons of Virginia now? a few linger in the state unnoticed, many have wended their way to the north, south and west. New Jersey can boast of an Alexander, one of the most distinguished theologians in the United States. Pennsylvania can boast of a Chapman, a Gibson, and a Horner, men that do honor to the

state, and the profession to which they belong, Ohio can boast of a Harrison, Kentucky a Clay, South Carolina a Waddill, and Tennessee, and all the western states, are indebted to Virginia for their distinguished men.

But we can only boast now of what Virginia has been, and the remains of her Washington and other worthies. They rest in her lap, entombed in her soil; yes, their bones are now mouldering in silent clay, and when we forget Virginia and her distinguished sons, we shall cease to live; for we are bound to the old Dominion by the tenderest ties of love and affection; the mind dwells on her scenes, with mingled sensations of pleasure and pain; but as near our hearts, and as tender as these recollections are, like all temporal things, they must be dissolved.

Perhaps Virginia has answered the great purposes for which she was intended; she may have effected her object in raising up distinguished sons, for great and mighty purposes; some of whom are now adorning other states. I am constrained to say that if a correct system of agriculture and education could have been kept up in Virginia, emigration would have been trifling in comparison to what it has been, and the old Dominion would number at this time between two and three millions.

Virginia has lost her forest, and exhausted her lands. Since the declaration of independence, 62 years ago, she has perhaps grown two millions six hundred thousand hogsheads of tobacco,* which would, if placed lengthwise, touching each other, form an extended line from New York to Liverpool, and if the average be $50 per hhd., the gross product will amount to the enormous sum of one hundred and thirty millions of dollars; deduct half for cost of culture, and there will remain sixty-five millions net. A very large portion of this money has been paid out of the state; while Virginia was engaged in making tobacco, neglecting her institutions of learning, other states were educating her sons, and the hard earnings of the planters have gone to northern schools and colleges. The old Dominion has paid in the last 50 years five millions of dollars for the education of her faculty, every dollar paid out of the state; half has been given to the Jefferson college and University of Pennsylvania; and the other half to medical schools throughout the United States and in Europe. If Richmond 50 years ago had had a university, the high character of the state would have filled the various chairs with distinguished professors; Virginia's sons would have been educated at home, the northern drain cut off, and emigration stayed, and why? Because the university would have had the support and patronage of Virginia, North Carolina, South Carolina, Georgia, the western states, and indeed the whole union; millions would have been saved, and the population of Richmond this day would exceed one hundred thousand souls.

But let us turn from this gloomy picture; has Virginia fallen never to rise again? I am not entirely prepared to answer the question, but this I will say, that the old Dominion can yet boast of distinguished, enterprising sons, men that would do honor to this, or any other age; and although she has fallen from her high estate, I say high, for her soul reached high, notwithstanding she has fallen apparently; I look forward to the time when she will rise again with renovated soil, and her worn hills and dales, galls, gullies and steril fields yield, in abundance, wine and oil, milk and honey, the finer fabrics of cotton, flax, wool and silk, together with grass, grain and lowing herds, giving to the agriculturist "a feast of fat things." Yes, this great revolution will take place; the tide of emigration will roll back, and the tobacco region in eastern Virginia, become studded with manufacturing villages and towns, and Norfolk the New York of the east. But it may be asked, what will bring about such a revolution? I answer internal improvement. Our numerous rivers, the finest in the world, connected with railroads throughout Virginia, extending their branches and arms into other states, giving facilities of travel throughout the extended bounds of the union, all connected directly with the great Atlantic seaboard, must and will produce a wonderful revolution, and that in a short time. Independent of this, eastern Virginia was intended by nature for farming and manufacturing purposes; for surely no part of the habitable globe is more highly favored with water power, or more favorable to the production of grass, grain, vines, pulse, roots and fruits. Manufacturing establishments are found at this time throughout eastern Virginia; they have taken root in Petersburg, Richmond and Alexandria, and we can but hope their march will be onward.

4thly. We come now directly to the subject before us, can we dispense with the culture of tobacco in eastern Virginia? My answer to the question is, that we can, and must give up the tobacco culture; the time has arrived when we are under the necessity of looking out for a new staple. What shall we substitute for tobacco? If called on to answer the inquiry, I would say that the silk culture in all probability will succeed the tobacco culture, and become the staple in eastern Virginia. We are in want of a permanent staple, one that will support us and reclaim our own worn and exhausted farms. I know nothing better calculated to effect this great object than the silk-culture and growing the Chinese mulberry, the MORUS MULTICAULIS.

I will now attempt to prove, that in the present exhausted state of our lands, little or no profit is derived from the cultivation of tobacco.

I shall confine myself principally to one acre of ground, and one laborer, and in making my calculations, have not taken any account of plantation tools, teams, or the value of land. Tobacco will be credited at $8 per cwt. lugs $4 50, wheat $1 per bushel, corn 80 cts. per bushel, potatoes 75 cts per bushel, pork $7 50 per cwt. beef 750 per cwt., silk $4 per lb., labor 25 cents per day.

I am aware that the prices and calculations will be found incorrect, they are given for what they are worth, with many grains of allowance. My tobacco, wheat and corn calculations are taken with alterations from similar estimates made by an able intelligent writer over the signature of "E," in the April No. of the Farmers' Register for 1837.

* Three millions hhds. is probably nearer the truth than the above statement, the gross product of which would be, at the same rate, one hundred and fifty millions of dollars. Deduct one half for cost of culture, there will remain seventy-five millions of dollars net profit. W. B. S.

I will now make an estimate of the probable expense in cultivating one acre of ground in tobacco.

Calculation 1st.

Expense of tobacco culture.

To clearing ground for plant bed 20 yards square and cutting wood four days' labor, at 25		$1 00
To burning plant bed, hoeing, manuring and covering, four days' labor, 25		1 00
To one day's labor in fallowing		25
To one day's labor before hilling		25
To making 4000 tobacco hills		1 50
To drawing 4000 plants, cutting off 4000 hills and planting, three days' labor		75
To one day's ploughing		25
To two days' weeding		50
To two days' hilling		50
To one day's ploughing		25
To worming, three days' labor		75
To two days' hilling		50
To three suckerings, three days' labor		75
To topping and priming, two days' labor		50
To cutting 4000 plants, hanging on sticks, scaffolding and housing, six days' labor		1 50
To cutting and hauling wood, three days' labor		75
To four days' firing		1 00
To striking down and bulking two days' labor		50
To stripping 900 pounds of tobacco eight days' labor		2 00
To re-hanging, two days' labor		50
To re-striking two days' labor		50
To prizing 900 pounds of tobacco, six days' labor		1 50
To carriage to market		6 50
To one tobacco cask		2 00
To warehouse expense		75
To nine cords of wood at 60 cents		5 40
To board and clothing laborer sixty-eight days at 13 cents		8 84
		$40 49

Credit.

By the sale of 750 lbs. of tobacco, at $8, is	60 00	
By sale 150 lbs. of lugs at 4 50	6 75	
		66 75
Deduct expense of culture		40 49
Net profit		$26 26

Calculation 2d.

Expense of wheat culture.

One acre of ground that will produce 900 lbs. of tobacco, will yield 20 bushels wheat.

To fallowing one acre of ground, one day's labor	25
To harrowing same, half a day's labor	13
To one bushel seed wheat	1 00
To cutting and shocking, one and a half day's labor	38
To hauling to barn, one day's labor	25
To threshing and fanning 20 bushels of wheat, two days' labor	50
To marketing 20 bushels of wheat, at 12½ cents	2 50
To boarding servant six days	75
	$5 76

Credit.

By sale of 20 bushels of wheat, at $1	20 00
By sale of straw and chaff from 20 bushels, at $1	1 00
Deduct cost of culture	5 76
	$15 24

Seven acres in wheat, can be cultivated with less labor and expense than one acre in tobacco.

Calculation.

To seven acres in wheat at $5 76 expense per acre, $40 32 cents.

By yield seven acres, 20 bushels per acre, is 140 bushels, at $1 per bushel, is	140 00
Straw and chaff from 140 bushels, at $7	147 00
Deduct expenses of culture	40 32
	$106 68

If the price of wheat be reduced to 90 cents per bushel, the product, including chaff and straw, will be 92 68

Calculation 3rd.

Expense of corn culture.

One acre of ground that will produce 900 lbs. of tobacco, will yield 40 bushels corn.

To one day's fallowing, one day's labor	25
To one day's ploughing before planting, one day's labor	25
To one day's ploughing, at the time of weeding	25
To one day's labor in weeding	25
To one day's labor in hilling	25
To one day's labor in ploughing	25
To two days' labor in pulling fodder and securing	50
To one day's work in cutting and securing tops	25
To two days' labor in pulling and hauling corn	50
To shucking eight barrels corn, two days' work	50
To carrying 40 bushels corn to market, at 12½ cents per bushel	5 00
To boarding laborer 14 days	1 75
	$10 00

Credit.

By sale 40 bushels corn, at 80 cents	32 00
By sale fodder from eight barrels corn	2 00
By sale shucks and tops from same	2 00
Amounts to gross	$36 00
Deduct expense of culture	10 00
Leaves net profit	$26 00

Four acres in corn can be cultivated with less expense and labor, than would be required to cultivate one acre in tobacco.

Calculation.

To four acres in corn $10 expense per acre is $40.

By yield of four acres, 40 bushels per acre is 160 bushels at 80 cents per bushel, is	128 00

Fodder, shucks and tops from same -	16
	$144 00
Deduct cost of culture [four acres]	40 00
Leaves net profit -	$104 00

If the price be reduced to 70 cents, the product, including fodder, shucks and tops, will be $88.

Calculation 4th.

Expense of potato culture.

One acre that will produce 900 lbs. tobacco, will yield 100 bushels potatoes.

To one day's fallowing - -	$00 25
To two days' preparing ground and planting - - - -	50
To six bushels potato seed (cut) at 75 cents - - - -	4 50
To two weedings, two days' labor -	50
To two ploughings, two days' labor -	50
To two day's labor in digging -	50
To carrying 100 bushels potatoes to market, at 12½ cents per bushel -	12 50
To boarding laborer nine days -	1 13
	$20 38

Credit.

By sale 100 bushels potatoes, at 75 cents - - - -	75 00
Deduct expense of culture -	20 38
	$54 62

Two acres in potatoes can be cultivated with the same expense and labor that would be required to cultivate one in tobacco.

Calculation.

To two acres in potatoes, at $20 38 expense per acre, - - -	40 76
By yield of two acres, 200 bushels, at 75 cents, is - - - -	150 00
Deduct expense of culture -	40 76
	$109 24

If the price of potatoes be reduced to 63, the product will be $85 24.

Calculation 5th.

Swine husbandry.

Expense of swine husbandry, connected with root and grain culture.

One hundred bushels of potatoes, will, with 40 bushels corn meal, fatten 12 hogs, allowing eight and a third bushels steamed potatoes, and three and a third bushels corn meal to each hog, which is more than the northern allowance.

To expense in cultivating one acre of potatoes, carriage to market deducted - - - -	7 88
To expense in cultivating one acre in corn, carriage to market deducted -	5 00
To 12 hogs, eighteen months old, if raised on the farm, may be charged $3 50 - - - -	42 00
	$54 88

Credit.

By sale 12 hogs, weighing 200 lbs. each, 2400 lbs. at $7 50, is -	180 00
By sale 120 lbs. lard, at 10 cents, is	12 00
	$192 00
Deduct expense - -	54 86
	$137 12

If the price of pork be reduced to $6 per cwt., the product will be, including lard, $101 12 cents.

Calculation 6th.

Beef husbandry.

Expense of beef husbandry, connected with grain and grass culture.

One acre of ground that will produce 900 lbs. of tobacco, will yield between three and four thousand pounds herd's grass hay; which will, with 40 bushels of corn meal, bring five beeves taken from the grass to market; allowing eight bushels corn meal and 800 pounds herd's grass hay to each beef.

To one day's fallowing - -	25
To one day's sowing and harrowing	25
To one bushel herd's grass seed -	75
To two days' mowing - -	50
To six days' securing and shocking, at 25 cents - - - -	1 50
To board laborer 10 days - -	1 25
To expense in cultivating one acre in grass - - - -	4 50
To do. do. do. one acre in corn -	5 00
To five beeves, if raised on the farm, may be charged $20 each -	100 00
	$109 50

Credit.

By sale five beeves weighing 500 lbs. each, is 2,500 lbs. at $7 50 per cwt.	187 50
By sale 150 lbs. tallow, at 13 cents	19 50
By sale of five skins, at $3 - -	15 00
By sale five tongues, at 50 cents -	2 50
By sale five heads, five viscera and 20 feet - - - -	12 50
	237 00
Deduct expense - -	109 50
	$127 50

If the price of beef be reduced to $6 per cwt., the product, including offal, will be $90.

Silk culture.

As I have ventured the opinion that the silk-culture in Virginia, will be substituted for the culture of tobacco, I beg leave to give the following statements from the most intelligent and distinguished silk-raisers in Europe. Average gross product of an acre of ground, according to Count Dandolo, is as follows:

To 198 pounds silk at $4 per pound -	792 00
Cost of culture - -	85 10
Net profit - - -	706 90

Average gross product from an acre of ground, according to Mr. John D. Homergue, is as follows:

To 243 lbs. silk at $4 per pound is -	972 00
Cost of culture - -	111 94
Net profit - - -	860 06

The following calculation, is predicated upon the statement of Gideon B. Smith, Esq., of Baltimore, that a full grown tree, (morus multicaulis) will yield foliage enough for 5,000 worms, and as 108 trees at 20 feet square apart will stand on an acre, so will that number of trees support 540,000 worms, and as 3,000 worms will make a pound of silk, so will 540 thousand make 180

pounds at $4, which gives $720, the gross average of an acre.

We will now state an account current, by which the net profit of an acre will be clearly demonstrated, and we beg leave to make this explanation, that with a view of providing against all possible contingencies, we have taxed 540,000 worms, with the expense of the labor of one million, which will more than cover all drawbacks arising from mortality among the worms or any other unforeseen casualties.

Expense of silk culture.

To interest on one acre land, valued at twenty dollars	1 20
To interest on laboratory valued $500	30 00
To hire two men five weeks at $6 per month	15 00
To their board one and a half weeks	15 00
To hire two women four weeks at $3 per month	6 00
To board two women at $1 50 per week	12 00
To hire four women three weeks $3 per week	9 00
To their board $1 50 per week	18 00
To hire 12 children from 7 to 14 years old, two weeks, at $1 per week	24 00
To their board at $1 per week	24 00
	154 20

Credit.

By sale 180 lbs. silk $4 per lb.	720 00
Deduct cost of culture	154 20
Net profit	565 80

As the above product of $720 gross is the work of five weeks only with two men, six women and twelve children, three crops of silk can be made in one year, if the culturist has 3 acres in morus multicaulis and supplies of eggs, kept in an ice-house, or some low temperature in order to prevent them from hatching until wanted.

To expense of three acres 154 20 per acre	462 60
Yield of 3 acres, at 180 lbs. per acre is 540 lbs. at $4 per lb.	2160 00
Deduct cost of culture	462 60
Net profit	1697 40

A table showing the actual profits of the mulberry culture, upon one, five and ten acres of ground according to the estimate of Mr. John D. Homergue.

Gross product of one acre	972 00
Cost of culture of one acre	111 94
Net profit	860 06
Gross product of five acres	4,860 00
Cost of culture	559 70
Net profit	4,300 30
Gross product of 10 acres	9,712 00
Cost of culture	1,119 40
Net profit	8,592 60

Estimate according to Count Dandolo, the Italian silk culturist.

Gross product of one acre	792 00
Cost of culture	85 10
Net profit	706 90
Gross product of five acres	3,960 00
Cost of culture	425 50
Net profit	3,534 50
Gross product of 10 acres	7,920 00
Cost of culture	851 00
Net profit	7,069 00

In a letter of the Hon. Ambrose Spencer of Albany to S. M. Hopkins, Esq., dated 7th April, 1835, he states, on the authority of the Burlington Free Press, that raw silk was produced in the town of Mansfield, Connecticut, to the amount of over $60,000 in 1834, and that the county of Windham produced silk annually valued at 500,000, and if reeled would be worth double that sum. This statement the judge believes to be substantially true.

"Near Boston, 420 pounds of silk, worth $3 50 per pound amounting to $1470 was raised by four girls, whose attention to this culture required but a small portion of the year. So says S. Blydenburg of Albany, New York. This fact contains one of the most powerful arguments in favor of the culture which we have yet seen. We find four girls—farmers' daughters, or helps, as hired persons are called to the eastward—successfully attending to four acres of mulberry trees, gathering the leaves, feeding the worms and performing all the labor incident to the business, and what is the result? Why at the depressed price of $3 50 per pound they made silk enough to bring $1470 or $367 50 to each hand; now if the present price which prevails in Massachusetts, $4 per pound from the purchaser, and 50 cents from the state, had then prevailed, each of these females would have averaged $472 25, or the whole have made, in the aggregate, $1,890, and independent of the state bounty, the 420 lbs. of silk would have brought $1680 or $420 to each of the females engaged in the feeding of the worms. And as on an average 3,000 worms completing their cocoons, will make a pound of silk, there were but 1,260,000 worms—thus it is evident, that the produce here recorded is far from being a large one, for had the orchard been planted to the extent of the capacity of the ground, 720 lbs. of silk might just as readily have been raised as the 420 lbs." But it may be said $420 to the hand is a high estimate, be it so, let us take half, which will give $210, if this is too much divide again and we have $105 to the hand, this is better than the culture of tobacco, more particularly when we consider that our worn lands are daily improving. A crop of silk is made in 5 weeks and will not interfere much with the regular business of a farm. In the silk culture all the members of a family may be employed, the young, the old, the maimed, the halt, the blind, all can gather mulberry leaves. Our tobacco barns throughout eastern Virginia will make the best laboratories or cocooneries, and nothing is wanting to prevent us from going heart and hand in the silk culture, but a few thousand mulberry trees (morus multicaulis) which may be propagated from cuttings in two years. The climate of Virginia is more favorable to the culture of silk than that of Europe, indeed it is as favorable as that of China, and the immense wealth of that country, by this culture is sufficient to convince every intelligent individual of the propriety of going into the silk culture in

the tobacco region of Virginia. "We are told by a gentleman of good intelligence that the whole charge of making a pound of silk in China does not exceed more than five shillings, and almost every person, man, woman or child, may work at it, and a man or woman with a child to assist in directing the thread of the silk may with a proper machine reel from the cocoon or silk bag, 1 lb. in a day." "Now I should think the labor of slaves employed in this work would produce above twice as much as those that are employed in making either sugar, tobacco, or cotton." I wish it to be borne in mind the culture of silk in America first had its origin in Virginia, the attention of the colony was called to the subject by the British government early in the sixteenth century, and it is worthy of remark that the connoisseurs of Europe pronounced Virginia silk to be the best in the world; more glossy, soft and of a better staple than the silks of Europe or Asia.

"Mulberry trees, and printed directions were early sent to Virginia, to encourage the silk culture, and as the king, James I. had 'understood that the soil naturally yielded stores of excellent mulberries,' he gave special instructions to the Earl of Southampton to urge the cultivation of silk in the colonies in preference to tobacco 'which brings with it many disorders and inconveniences.' In accordance to which the earl wrote a letter on the subject to the governor and council of Virginia, in which he desired them to compel the colonists to plant mulberry trees. In 1623, the colonial assembly directed that they should be planted, and in 1656 the culture of silk is described as the most profitable commodity for the country, and a penalty of three lbs. of tobacco is imposed upon every planter who should fail to plant at least ten mulberry trees for every hundred acres of land in his possession. A premium also of four thousand pounds of tobacco was at the same time given to a person as an inducement to remain in the country, and prosecute the trade in silk, and the following year a premium was offered of 10,000 lbs. of tobacco to any one who should export two hundred pounds worth of the raw material of silk, and five thousand pounds of the same article to any one who should produce one thousand pounds of wound silk in one year. The act coercing the planting of a given number of trees was repealed in 1656, and renewed two years thereafter; but the system of bounties and penalties was continued until 1666, when, owing to the success of the culture, they were deemed unnecessary. While Sir William Berkley was in England on the occasion of his re-appointment as governor, in conversation with the king, his majesty strongly recommended the culture of silk, and as an inducement to the colonists to attend to his advice, mentioned that he had formerly worn some of the silk of Virginia, which he found not inferior to that raised in other countries. The encouragement given by the colonial legislature had the desired effect, a spirit of generous enterprise and emulation was infused into the minds of the agriculturists of the old Dominion, mulberry trees were generally planted and the raising of silk worms was made a part of the business of many of the farmers. Indeed so zealously did the larger planters and farmers enter into it, that many were found to come forward and claim the premium offered by the legislature; and among them was a Major Walker, a member of that body, who produced satisfactory testimony of having seventy thousand trees growing in the year 1664. The eastern part of the state abounds with white mulberry trees at present, thus affording the inhabitants the means of promptly taking up the silk culture as a portion of their system of husbandry."

Silk has been cultivated more or less in every state in the union (except Maine.) Early in the seventeenth century, silk was exported to Europe from Virginia, North Carolina, South Carolina, Georgia, Maryland, Pennsylvania and the New England states, and in 1750, two thousand five hundred lbs. of silk were raised in the neigborhood of Philadelphia.

In conclusion, I would respectfully suggest the following, for the consideration of the cultivators of tobacco in eastern Virginia—viz.: Curtail the tobacco crop one-third in 1839, two-thirds in 1840, and continue one-third for the purpose of paying for taxes, smiths' bills, iron, salt, sugar, coffee, &c. Let each tobacco culturist purchase 1000 cuttings of the Chinese mulberry (morus multicaulis) which will cost $40, to be planted as we do corn, the 1st of March, in good ground, and as there are two eyes to each cutting, under the most favorable circumstances, those cuttings will become 2000 trees from 4 to 6 feet high in November following, yielding 20 cuttings to each tree, amounting to 40,000; and if planted in like manner in March, 1840, there will be an ample supply of mulberry trees for the purpose of feeding and raising silk worms. Go into the silk culture in 1839 with the native mulberry (morus rubra,) which will give the young tyro a useful lesson in the management of silk worms. In 1840 the leaves from the scions of 2000 roots with the leaves of the native mulberry, will give a good crop of silk. In 1841 the supply of leaves will feed millions of worms and the culturist may go largely into the silk business.

MORE OF THE INTRODUCTION OF THE MORUS MULTICAULIS.

To the Editor of the Farmer's Register.

Linnæan Garden and Nurseries,
Flushing, Nov. 1, 1838.

My attention has been this day called to an article in the Richmond Enquirer, of the 12th inst., on the introduction and dissemination of the morus multicaulis.

My father, Mr. Wm. Prince, more than half a century ago, devoted great attention to the silk culture, and having, at that early period, reared many bushels of cocoons—a pair of gloves manufactured from which he still possesses—and, on my part, having imported the morus multicaulis *before it had a name*, and having urged the subject of the silk-culture for the last fourteen years—combatted its revilers in every stage, and contested for its adoption as part of the *true American system*, besides losing about $5,000. in one importation of the morus multicaulis trees, I am not content to let such flimsy statements as the one referred to, pass without a suitable rebuke; and you may calculate on receiving, in due course, a full and explicit communication on the subject.

Yours, most respectfully,

WM. R. PRINCE.

December 22*d*, 1838.

P. S. Since writing the preceding short letter, touching the morus multicaulis, I have seen Mr. John Carter of Richmond, who, in a conversation with Mr. Garretson of this place, and myself, and without our introduction of the subject, explained to us how he first obtained the morus multicaulis. He stated, that Dr. Norton received *a tree from us in the spring of* 1838—that during the summer, he spared him a branch, with which he budded some white mulberry trees—and that this was his commencement of his culture of the tree. This is precisely as I some time since suggested to Gideon B. Smith, Esq. At that period, we were in the habit of receiving from Dr. Norton, and his friend, Dr. Hening, many native plants, collected in the vicinity of Richmond, and of transmitting them, in return, such trees or plants as they desired; and I believe I can produce from among our old papers, the original invoice of trees sent them in the fall of 1828, or spring of 1829, in which was comprised the "Philippine Island mulberry," it not having, at that early period, received the title of "morus multicaulis." Most respectfully yours,

WM. R. PRINCE.

The first portion of the foregoing communication, was held back, in expectation of the more full statement, therein promised, being furnished for publication. That not having been received, the piece is now inserted, together with the postscript of a much later date. The piece in the Enquirer, which called forth this letter, was that signed "J. W.," which gave to Dr. Norton so large a share of the merit of introducing and spreading the morus multicaulis; which pretension was examined in a former article of the Farmers' Register, (No. 8,) and its total emptiness then fully exposed.

But though Mr. Prince was fully justified in his expressions, upon all the lights before him, it is proper, and but doing justice to Dr. Norton, here to state, that we have heard from a private source of a fact, of which neither Mr. Prince nor any other person who has engaged in this controversy had heard, until after the last article referred to had gone to press. This fact is, *that Dr. Norton received his first tree direct from France, in* 1828, as we understand he stated to a highly respectable gentleman, in answer to the inquiry, as to the manner by which the first plant came into his possession. This fact is one of some interest in the history of the introduction of the tree; but, if ever so well established, it would not add one particle to the strength of the claim of merit before made for Dr. Norton, if the importation was not ordered by him upon *knowledge of the plant and its value*, or if it remained long afterwards in his possession before he knew either its character or value. On these points, information is desired from Dr. Norton, or others; and if it should appear that he has not received his due credit in our former remarks and deductions from the then known facts, we shall take pleasure in rendering to him full justice.

There was an evident mistake of the pen, in the latter part of the foregoing letter, where the time of sending Dr. Norton his tree is stated by Mr. Prince to have been in "1838." The time meant to have been written, was doubtless 1828; and even in this, we infer that Mr. Prince was mistaken, as was Mr. Smith, in his former statement of the time of receiving his first tree. On this subject, the following explanation was sent, and which now can be appropriately offered.

Baltimore, Nov. 20, 1838.

I have to ask the favor of you to correct my statement as to the year when I first received the morus multicaulis. My former statement was made from memory, not supposing at the time I had any paper by which I could ascertain the exact date; but on looking over a large bundle of old letters last night, I found the letter from Mr. Prince, containing *the invoice*, in which the multicaulis tree is included. The letter is dated 11th November, 1829, and the following is the invoice:

"Morus Tartarica
"Morus alba lucida lobata
" latifolia obscura lobata
" constantinopolitana
" ovalifolia
" *Chinese*, (very large and new.)"

The "Chinese" is the one now called morus multicaulis. I was strongly under the impression that it was first sent to me under the name of "Philippine Island mulberry" by Mr. Prince; but it seems that name was given to it afterwards; and that even after that the name "morus multicaulis" was given to it. That it was not known *then* as morus multicaulis, and that its good qualities were not then known, is proved by the following remark of Mr. Prince in a letter dated October 21, 1829, advising me that he intended to send me the above trees.

"I hope, however, I may be able to aid you a little in the *silk cause*, by sending you some of the finest sorts of mulberries, particularly the celebrated *Tartarian*."

The packet that brought these trees to me sailed from New York on Saturday the 7th of November 1829; I consequently received them about the middle of that month. But you see that Mr. Prince does not allude to the Chinese tree, except in the invoice, as being any thing extraordinary; but particularly mentions the Tartarian. My old tree, therefore, has been in my possession but nine years instead of ten, (as I supposed,) and therefore it is now but ten years old.

On the 12th July, 1830, Mr. Prince wrote me as follows:

"I should have been pleased if you had stated that your Chinese mulberry tree came from me. I don't believe one tree exists in the country but yours and mine—we have about twenty."

On the 17th September, 1831, Mr. Wm. Kenrick, of Massachusetts, wrote me as follows:

"I notice you cultivate the morus multicaulis. Mr. P. wrote me last spring, (spring of 1831,) to the same purport. I have or rather am beginning to cultivate them since—*since last spring*—(spring of 1831,) otherwise except Mr. Cobb procured

two plants last June of Messrs. P., it is not in New England. * * * Do you then really think that this people will ever enter into the business of raising silk?"

The above, my dear sir, fixes the date of my reception of the trees exactly. It takes off one year from the date fixed upon in my former statement, or rather makes the date one year later. I regret having fallen into the error, and hope it may be attributed to the proper cause—I could have no motive in misstating the date; and I hope this prompt correction of it will be received as evidence that I had no desire to do so. I have quoted Mr. Kenrick's letter merely to show at what time he commenced the culture of the tree.

GIDEON B. SMITH.

In addition to the above new, or supposed facts, as to the early introduction and early want of knowledge of the morus multicaulis in this country, we have obtained information of another, and previously unknown source of supply, from which alone the southern states might have been already stocked, if the value of the plant had been better known. The statement is in the following extract of a letter received from a correspondent in Georgia, dated November 11th.

"Some 8 or 10 years since, a gentleman who commenced a vineyard in Harris county, 22 miles above Columbus, sent to France for a vine-dresser; and the person engaged, M. Besson, thought it would not be amiss to bring out a few morus multicaulis, which he planted adjoining the vineyard. Owing to the worthlessness of the vines, or want of proper energy, or both, or some other cause, the vineyard was suffered to go to decay, and the Frenchman to other business. The plantation was subsequently sold to various persons, till it fell into the hands of Dr. J. W. Turner, who being a man of some taste and zeal in such matters, has revived the place to some extent, and propagated the mulberry trees left by the Frenchman, until there are 100,000, or more. A short time since, the owner's zeal growing cold, and not finding a market for his trees, he sold the land, consisting of 1000 acres, with three improvements (or settlements,) thereon, including the old vineyard and the mulberry trees, for $16000, to a gentleman of Columbus, who has a brother in Baltimore, and therefore was better informed as to the then demand for the trees. The purchaser will shortly leave here for Baltimore, to make sale of his trees, thinking he will get more there than here. Many of our citizens have lately become very anxious to procure the trees, and there is no telling where the excitement will end.

"Poor Besson is dead, and his widow lives in obscurity and indigence. So goes the world. I like your suggestions relative to G. B. Smith, and the "Gratitude" farm, and hope our fortunate citizen may be induced to contribute something; at least I hope he will not forget the poor widow of the man who laid the foundation of his fortune."

PREPARATION OF METALLIC CANDLE WICK.

Melt 100 parts of tallow, or wax, or any mixture of these, and add 5 to 10 parts of carbonate of lead well pulverized. The materials easily unite by stirring. Steep the wicks in this composition while warm and fluid. When cold the candles may be made upon them by dipping or moulding. In burning these candles, the carbonate of lead is decomposed by the heat, and little globules of lead collect on the top of the wick, which bend it out of the flame and thereby increase the beauty and brightness of the light.

[*Jour. de Conn. Usuelles.*

For the Farmers' Register.

ROUGH FIELD NOTES.

No. III.

Philadelphia and Columbia Railroad.

This work is highly important, being a link of the great improvement which is now in successful operation, connecting Philadelphia with the west. It is 83 miles long, and connects the waters of the Schuylkill at Philadelphia with those of the Susquehanna at Columbia. The highest summit crossed in this distance is the Mine Ridge, elevated 600 feet above tide, and distant 54 miles from Philadelphia. The descent to each river is made by means of an inclined plane worked by stationary power. The one at Columbia rises ninety in 1980 feet, the other at the Schuylkill is 180 feet high and about half a mile long. At the latter place the stationary engine with its room, is a model for neatness and order. The train is let down gently and safely by means of a rope three inches in diameter. The Schuylkill is crossed by a handsome covered bridge 900 feet long, on which are laid no less than four rail-way tracks.

A double track has been laid throughout the entire length of the road. The superstructure consists principally of the edge rail, supported every three feet on stone blocks, about one foot cube. Wooden sills are substituted for these cubes of stone, at intervals of 15 feet, which pass under both rails and act as ties. At each point of support the rail rests in a heavy cast iron chair, and is fastened in it by means of a small iron wedge on each side. The chair is previously fixed to the block, by means of wooden plugs driven into holes drilled into the stone. The sills and blocks are all firmly bedded on broken stone. On many of the high banks, the blocks of stone are entirely replaced by sills of wood, no doubt, to prevent inequality in settling. A portion of the road which was once laid with stone and iron plate, they are now ripping up, and substituting the superstructure just described, except that the ties are made of stone instead of wood. Though many errors of location, as well as of construction, are perceptible, yet this work may justly be placed in the first class of railroads.

The Philadelphia and Columbia railroad belongs to the state. The state owns also all the motive power. Individuals or private companies put their own coaches and burthen cars on the road, and pay to the state tolls, just as boats do on a canal. The state owning the engines which propel these wagons, has of course the regulation of the hours for starting, &c. so as effectually to guard against accident from the meeting of trains. The transportation on this road is immense. In passing over it, we met two long trains of coaches filled with passengers, and two heavy produce

trains—we also overtook two long trains laden with produce and merchandise. According to the last report of the canal commissioners, this road yielded 5 per cent. while the canals of the state yielded only 3 per cent on their cost, and in addition to this the engines on it cleared $20,000 in 12 months.

It is worthy of note, that a locomotive manufactured by Norris of Philadelphia, ascended the inclined plane near the Schuylkill.

Lancaster and Harrisburg Railroad.

This road is 36 miles long, and, as its name indicates, leaves the Columbia railroad in the vicinity of Lancaster, and strikes the Susquehanna at Harrisburg. It is remarkable only for its tunnel near Elizabethtown, which is 900 feet long, and intended only for one track. This tunnel has only one shaft, which is 90 feet deep. It passes through a soft red sandstone, and is arched with brick and stone its whole length. There is evidence of much carelessness in its construction. The superstructure of this road consists of sills, bedded 5 feet apart, with rails of pine and oak, measuring 9 by 5 inches. The iron plate is ¾ inch thick. The whole road is much out of order.

In going from Philadelphia to Harrisburg, the traveller passes through the finest, and most highly cultivated portion of Pennsylvania. The fertile fields, and large substantial barns, bear mutual evidence of the annual use and convenience of the one, and great productiveness of the other.

Stonington Railroad.

Stonington is hardly known in the south, and was but little talked of, until the projection of its railroad. It is a beautiful village, containing more than 3000 inhabitants, and situated nearly in the south-eastern corner of Connecticut, on the sound opposite the eastern extremity of Long Island, and is distant 120 miles from New York. Its situation is highly pleasing. Fisher's Island is in sight to the south, and to the south-east is seen the "ocean's wide expanse." The coast is completely rock-bound, and hence the name of Stonington.

The traveller from New York to Boston has the choice of two routes. He may either take the steamboat for Providence, in which case he doubles point Judith, and encounters the roughness of sea peculiar to that promontory, or he may take the steamboat for Stonington, and thence go by the Stonington railroad to Providence, and thus avoid all the *disagreeables* of Point Judith. From Stonington to Providence the distance is 48 miles. Only one track is down, though the grading was done with a view to two. There are no large structures, though many small bridges. For twenty miles, the road passes over rocky barrens or uncultivated marshes. The country, however, improves, and thence to Providence, presents the appearance of being moderately well cultivated; the soil being light and sandy, without much scenery that is very interesting. The grading, after passing through the rocky country near Stonington, is light until the road approaches Providence. This is a new road, and the superstructure is in excellent order. It consists of the T rail, supported every three feet on wooden sills. The cross section of the rail presents a base 4 inches wide—the rail is 3 inches high.

Probably the stock of no railroad in our country is more variable than that of the Stonington road.

Boston and Providence Railroad.

This road receives all the travel both from the Stonington road and from the New York and Providence boats. Large passenger trains pass each way three times every day, and the stock is considered a permanently good one—it is paying now 12 per cent. This road is 41 miles long, with one track, laid on the same plan as the Stonington road. The chair on which the rail rests is a flat piece of iron 5½ by 8 inches, and the rail is let into it 3-8 of an inch and confined by 4 spikes, 2 on each side. Both these roads are free from bold curvature, and no pains are spared to keep them well drained. Besides the longitudinal drains on the sides, there are little cross grips every 15 or 20 feet. Besides the wooden bridge across the Pawtucket near Providence, and a stone one about 14 miles from Boston, there is no other structure of moment. The grading is light, through a soil generally sandy. I passed from Stonington to Boston, 89 miles, in four and a half hours, and never travelled more smoothly. The railway throughout is in the finest order. After leaving Providence, the country continues uninteresting, until near Boston, elegant country houses and fine gardens are seen all around.

Boston and Lowell Railroad.

The Massachusetts railroads are decidedly the finest in this country. The necessity of obviating the ill effects of the severe frosts, causes them to be built in the heaviest and most permanent manner. Like all the other railroads leaving Boston, this crosses the marsh, which makes Boston so nearly an island, by means of long trestle work. From Boston to Lowell, the distance is 26 miles, and there are two tracks nearly all the way. Both the T and fish-bellied rail is in use; the former preferred. The rail rests on stone sills, firmly bedded, 3 feet apart. These sills or sleepers are 8 to 10 inches wide, and at the joints of rails as much as 12 inches, and in some cases, rest on parallel walls of masonry, sunk sufficiently low not to be affected by the frost. The sleepers sometimes alternate with cubes of stone, but not often. When the fish-bellied rail is used, it rests in chairs on every sill, like those used on the Philadelphia and Columbia railway. The T rail is let into the stone sill 3-8 of an inch, and confined by spikes. Between the chair and stone, thin slips of wood have been introduced, but this does not prevent the disagreeable jarring which seems incidental to all stone and iron roads. All the road bridges across this road, as well as the Stonington and Providence roads, have expensive abutments of masonry. There is no viaduct or other structure of moment. The grades are very gentle, probably in no case exceeding 10 feet to the mile.

The income of this road is derived from travel, and from the transportation of the raw material to, and of the manufactures from Lowell. An idea of the business of this road will be best formed from the statistics of Lowell.

Lowell is a new looking town, with unpaved streets, which has sprung up on the banks of the Merrimack, to the water-power of which it owes its origin, as well as its rapidly increasing population. Its manufactures are so extensive that it has been termed the "Manchester of America."

There are not fewer than 26 extensive establishments for the manufacture and printing of cotton goods, and the manufacture of carpets and other woollen goods, whose agregate capital is not much short of $10,000,000, and which engage not many less than 10,000 operatives and superintendents. There are nearly 5000 looms and more than 160,000 spindles in continual operation, which produce, annually, the rise of 51 millions of yards, and consume more than 16 millions of pounds. Nearly 4,000 barrels of flour are annually consumed to make starch, of which 500,000 lbs. are used in sizing, &c. The wages of the operatives amount each month to more than $100,000. The manufacture of locomotives and divers other smaller matters is also carried on. Lowell now contains upwards of 20,000 inhabitants, and it was only about 16 years ago that the first factory was established.

Query. Had Richmond, with its unlimited water-power, (a water-power as far superior to that of the Merrimack as the energy of the people of the north is to that of the people of the south,) been in the hands of the citizens of Massachusetts for the last 30 years, what would now be its extent, its wealth, its resources, its population?

At Lowell a stranger, particularly a southerner, meets with no difficulty in gaining admission into any of the factories. I found this the case throughout the north. The general appearance of good health and happy looks among the hands are no less a source of gratification than the extensive factories themselves.

When we consider the immense intercourse which must exist between Boston and a place of this sort, only 26 miles distant, the quantity of material and manufactures, and merchandise, which must be carried from one to the other, we may form some idea of the business of the Boston and Lowell road. It is regularly dividing 12 per cent. and could easily divide more, but for the folly of the state legislature, (fully exemplified in this case,) which requires that the dividends shall be limited to 12 per cent. and that all over and above that amount shall be paid as a tax to the state. The company, however, waste all the surplus revenue in making alterations, &c., in their road, which are not called for, or so little so that they would never be made, were the stockholders permitted to pocket what they justly consider ought to be their own.

Lowell and Nashua Railroad.

On arriving at Lowell, I found this road just opened. It extends from Lowell along the southern bank of the Merrimack, 15 miles to Nashua, which is a village just within the southern border of New Hampshire. The lattice bridge by which the road is to cross the river to reach Nashua, which is on the opposite side of the river, is not yet finished.

This road, 15 miles long, cost $300,000 and is built on an excellent plan, and is now in good order. The superstructure consists of wooden sills, placed as cross ties, 3 feet from centre to centre, and resting on two parallel string pieces of 3 inch chestnut plank, placed longitudinally beneath each rail. Where these planks abut one against the other, the joint comes over the centre of a board four feet long, giving a lap of two feet to each plank, and thus effectually preventing the extremity of one string piece from settling below that of the other. On the cross sills rests a heavy T rail, the cross section of which is 4 inches high, and has a base 4 inches wide. This rail weighs at least 2 lbs. to the lineal yard, more than any rail which has been yet imported. The chair by which it is confined to the sills is the same as that used on the Providence and Stonington roads. The grading was light, and there is no heavy structure besides the bridge mentioned at Nashua.

Boston and Worcester Railroad.

Like the other roads radiating from Boston, this ranks with the first class of railroads in this country, both in point of construction and the amount of its business. It is 42 miles long—route direct—curvatures easy, with some deep cuts, but principally through sand. The edge rail is used, supported every 3 feet, generally on wooden sills, but sometimes on stone blocks. The rail rests on a chair similar to that in use on the Philadelphia and Columbia road.

From Worcester, the present termination of this road, a railway by next summer will be in operation, extending westward to the banks of the Hudson, by which means a new route will be opened for travellers from New York to Boston, viz. by steamboat up the Hudson to the terminus of this new road, (which will most probably be Hudson City,) and thence by railway through the heart of Massachusetts to Boston. By this means the Boston and Worcester road will be enabled to come into competition with the Boston and Providence road for this immense travel, and its revenue, already large, will be greatly increased. The eight-wheeled coach does not seem yet to be much in use in this state, but on all the roads the coaches, though on the four-wheel principle, are elegant in point of style, and delightful in point of comfort.

The three great and important roads, namely, the Providence, Lowell and Worcester, were chartered in 1830 and 1831. They cost a great deal of money, but have been completed in a style which will render them permanent and useful. They do credit to their projectors and constructors, and are justly the pride of Massachusetts.

ANSWER TO "PRINCEANA." REMARKS ON MULBERRY AND SILK-CULTURE.

To the Editor of the Farmers' Register.

It was not until to-day that we saw the article in your paper, signed "Anti-puff," and which bears some marks of having emanated from a source, where the writer was not disinclined to benefit your sales of trees, &c. A question may, perchance, arise in some minds, whether it is the most especial duty of an editor to admit communications to his paper, which are particularly calculated to advance his own personal interest, by attacking those of his subscribers and advertisers, whose business avocations may happen to come into collision with his own; as there may be some persons so ill natured as to presume, that he is not totally adverse to their admission. Your paper has always received from us what little aid we could bestow by recommending it to our friends, and it has been with pleasure that we have marked its rapid advancement—but permit us to say,

that since its editor has entered the arena, as a vender of mulberry trees, we have had a suspicion that he did not manifest quite as much of that absolute disinterestedness for which he was formerly so distinguished. One might suppose that with his commendable spirit, he would feel contented at pressing forward so rapidly to the goal, and with being on the point of seizing the golden prize, without caring to cast any Parthian arrows on his less worthy and less successful competitors, who seem almost concealed by the obscurity of their distance. Permit us, sir, in illustration, to quote from the advertisement in your "Country Advertiser," in which you say as follows: "The great superiority of the multicaulis plants and cuttings, (referring to those you advertise,*) in luxuriancy of growth and as stock to raise from, is now universally acknowledged by the northern dealers, and that ground of preference is stated in their advertisements of southern plants for sale." Now, sir, we will not adopt the words used in your paper, and state that this assertion "is grossly and manifestly false," but we do appeal to the silk culturists of Burlington and Philadelphia, and to other northern dealers generally, whether it is not notorious that the southern trees offered for sale the last season, could not be sold for near the price of northern trees, arising from the great preference given to trees of northern growth, and so far from its being stated in the advertisement of southern trees "as a ground of preference," it would have been a manifest injury, and we have never yet seen any but *southern* advertisements that ventured such an assertion. We wish not to undervalue the trees grown in Virginia, they are among the best of their kind; but it is yourself, who, from erroneous conceptions, have become the aggressor, in seeking to benefit your own sales, by depreciating, as you say in your advertisement, "the whole crop raised north of Philadelphia;" whereas, for our part, we act only on the *defensive*, and seek but to counteract your erroneous denunciations, made in the double capacity of advertiser and editor, and this we do without attacking any one, and without entitling them *Ruffiniania*. In our plantations, which the last season covered about twenty acres, we did not use one southern tree or cutting, and the southern plantations, we presume, have all originated from the trees first imported, propagated, and disseminated by us. Now, sir, as to the wager and competition, which "Mr. Anti-puff" might much better have accepted than to have ingeniously eluded by an attack, we are willing to meet him on what he declares to be the worst position. We will take 2000 trees of one year's growth, without any selection, from a parcel *grown in Connecticut*, and which are now just as they grew; and he may take a similar number of trees, of the same age, grown in your state by him, by you, or any of your friends, he also taking them as they grew, without selection; and we will agree to measure the average girth and height of the main stalk or body, and the length and number of buds on the branches, and the parcel which possesses the superiority in a majority of these points, shall be entitled to the benefits of our proposition. This is a plain offer, and although we may be unsuccessful, it will at least serve to show that the valley of the Connecticut is not to be despised, and that the writer in your paper is ignorant of the fact, that the average growth of the morus multicaulis, in that valley, the present season, was equal to the growth in Maryland and Virginia. You will perceive we spoke but of Rhode Island and Connecticut in our notice, but he equivocates and contrasts *all New England* with Virginia, to give a semblance of what is not the fact, that we had included it all in our assertion.

Having now gone through the actual business part of our communication, we will make some few general remarks on the mulberry culture. It is well known that climate is greatly ameliorated when in proximity with the ocean, and our remarks relative to Rhode Island, Connecticut, and Long Island, were based upon this fact. We did not at all refer to the country in the interior, and you will perceive, therefore, that there is not so much difference in our views, as might at first be supposed. The peach, which is a native of Persia, has made growths here of 9 feet in a single season. Trees of the morus multicaulis, planted in our grounds after the 10th of June, attained in many instances a height of 6½ to 7 feet, and although our trees and cuttings were planted very late, and not completed till the middle of June, we have raised above 200,000 trees, measuring from 4 to 7 feet in height, and there were several other plantations in this vicinity in which the trees were 6 to 7 feet in height. Trees, like mankind, become by degrees acclimated, and we, this summer, saw some large morus multicaulis trees in the garden of Mr. Bestor of Suffield, Connecticut, which occupied a high exposed position, and had been growing there for years, without the least injury, and we witnessed the same fact at Mr. Kenrick's nursery, near Boston. The more completely a tree becomes hardened to climate, the more sure it is to succeed. The Catalpa, Ailanthus, Pride of India, &c., brought from the south, are prone to continue their growth to a much later period than the same kinds of trees of northern growth, and consequently are injured by our frosts before their wood is matured. But northern trees sent to the south are sure to succeed, and to attain their utmost development. The difference between the climate of Maryland and Virginia, and of this vicinity, is very trivial, and we refer more particularly to South Carolina, Georgia, and the states south of them in our preceding remarks. In those states where the contrast of climate and seasons is very great when compared with the north, the multicaulis will of course attain a greater height and development than in the more northern states. This is a point on which I presume there exists no actual difference of opinion.

* *None* were advertised for sale, and therefore the writer's shaft is entirely misdirected. In the advertisement in question, (which may be seen also on the covers of the 7th and 8th Nos. of Far. Reg.) it was merely proposed to cultivate buds or cuttings on shares for the owners—offering to return either 3 for 1 furnished, certain, or two-thirds of the whole crop. Either of these bargains Mr. Prince would do well to make for his own cuttings with any careful cultivator in lower Virginia; and we suspect that there would be insuperable objections, with both parties, to such a contract being made for cultivation in the *Linnæan Gardens and Nurseries*.—Ed. Far. Reg.

We will now conclude, by a word to our fellow-laborers in the same pursuit, the silk culture; the field for our operations is immense and wide enough for us all. The object is a great national one, and forms part of the *true American system.* We approve of the argument recently advanced, that every one who derives profit from the cultivation of his trees, is bound to do more, and to expend a portion of earnings in a cocoonery, at least, if not in a manufactory. *We intend to do both*, and we wish none other but that friendly and rational competition which shall develope itself by presenting the most plainly and satisfactorily to the American people, the ease and simplicity of every department of the silk culture. You have yourself been a most efficient and valuable pioneer in the cause, and no one is more willing to render you homage therefor than ourselves. Your paper has diffused the most useful information far and wide, and has awakened in enlightened Virginia, that spirit which was but latent, and which it required only your pen to illume. Our friends Gideon B. Smith, Dr. Norton, T. S. Pleasants, John Carter, General Cocke, Luther J. Cox, E. P. Roberts, Rev. D. V. McLean, the Messrs. Cheney, and a host of others have thrown the whole weight of their talents into the general cause, and what results may we not anticipate from their exertions, and from the spirit which now pervades all classes? Do Americans, when they undertake a great object, allow themselves to be surpassed by any other nation. Does our mighty country, embracing every variety of climate that all the silk countries of the world can boast, shrink from a competition calculated to develop her immense advantages, and to render her independent of foreign importations, which have in a single year drained her of above twenty millions of dollars? We answer firmly in the negative, and declare our absolute conviction, that such are the advantages of our climate, such the energy and industry of our citizens, such their tact in the invention of suitable machinery, and last, though not least, such the advantages of the multicaulis tree over every other variety in accomplishing that most important point, *the economy of labor*, that within five years our country will command the balance of the silk trade in its favor, and become a great silk exporting country.

Yours, most respectfully,

WM. PRINCE & SONS.

Linnæan Gardens, Flushing, Nov. 17, 1838.

P. S. We hope soon to have a paper on the silk culture published here, and we are preparing a lengthy article explanatory of the silk culture, *to be distributed gratis*, in which we shall comment also on the introduction and dissemination of the morus multicaulis, and show the immense numbers we have imported and propagated, including 54,000 that were thrown into the New York dock, in the winter of 1835—36, on account of their being totally rotten from the voyage.

To the Editor of the Farmers' Register.

THE MARL INDICATOR.

I beg leave to call your attention to a striking difference between the drawing, in your November number, of the plant which you call "*The Marl Indicator*," and the decription of it by one of your botanical friends. It seems that both he and the artist who drew it had the plant itself before them. One or the other, therefore, must have examined it too carelessly, or such a mistake could not possibly have happened. But the consequence is, that those who never saw the plant are no wiser now, than they were before your paper came out. Again, your friend, Mr. Gideon B. Smith, has made the matter rather worse, by declaring, (as you quote his letter,) that "*the description of the plant and the drawing agree perfectly*," &c. Now, what is the fact? Why, the description says, it has "*leaves opposite amplexicaul*," whereas, the drawing shows leaves connected with the stalk or stem, in the common way, at a point.

Probably, my good sir, I should never have found out this blunder, but being no botanist myself, yet very desirous of knowing every thing about this extraordinary plant which I could understand, I set to work, with a botanical dictionary, to hunt out, as well as I could, the meaning of all the cramp, puzzling words which I found in your friend's description. When I came to "*amplexicaul*," the dictionary thus explains: "*having the base surrounding or embracing the stalk;*" but on turning over to the drawing, I could make out nothing like it—unless, indeed, the words "*surround*" and "*embrace*" mean something very different in botany from what they do in common parlance. In this annoying quandary I have deemed it best to submit the matter to your arbitrament, in the confident hope that you will beg your botanical friends, in behalf of all who have no knowledge of their truly delightful science, to take a little more pains the next time they undertake to indoctrinate such ignoramuses as your old friend COMMENTATOR.

[The error stated above really exists; but it was not made in the botanical description of the plant, nor by the engraver, but by the artist who designed and colored the picture. The very slight difference (to the view, though important as a botanical characteristic,) escaped his observation, as it did in the engraving that of all other persons, until subjected to the microscopic scrutiny of our friend Commentator.]

TO SUBSCRIBERS, AND THE PUBLIC.

The attention of the subscribers to the Farmers' Register, and of the agricultural community in general, is respectfully requested to be given to the annexed conditions of publication, for Vol. VII; and especially to the reduction of the cost of subscription, by one half, to every individual who may choose to comply with the easy conditions annexed to that benefit. Each subscriber now on the list, who has paid $5 in advance for Vol. VII, or who shall pay in due time and the manner specified, may order, and have sent to the address of a *new* subscriber, a second copy of the same volume, without further charge. And for a like

remittance of $5, made in advance, or at the time of the order, any two new subscribers will be furnished with a copy for each. Thus, while no single subscription or payment will be for less than $5, the price, in effect, will be reduced to $2 50 the copy, to every subscriber, old or new, who will unite with one other new one in a joint payment for two copies.

This offer, if ineffectual, will be the last of several different attempts made by the proprietor, for the purpose of inducing the agricultural public to aid his efforts to furnish the Farmers' Register at a lower price than any valuable publication has ever been issued in the southern states. Heretofore these offers and efforts have met with no effectual response. This one will, and must be, final. If fully availed of by subscribers now, and also hereafter, upon similar conditions, the proprietor will be sufficiently compensated for the great reduction of price, by a greatly increased issue, and the publication can be continued to be obtained hereafter, on the like conditions, at half the regular cost, heretofore. To furnish the new subscribers now expected, it is necessary to commence, and continue, even if that expectation should not be realized, an additional and extra impression of the work of more than double the amount of its present and usual issue; and it will require that all this additional supply shall be absorbed by additional and increased demand, to prevent loss to the publisher from the change. Nevertheless, he has determined to encounter the risk of such loss; and having commenced the course, and taken the first step, he is fully committed to the completion; and cannot, without still greater loss, retrace his steps, or avoid bearing the full expense. Should the offer be properly appreciated by the agriculturists of the southern states, and the necessary support be offered for so cheap a publication, then both its permanency and its continued cheapness will be secured. But if less should be the result, it will be the last of the risks and many and heavy personal sacrifices made by the editor and proprietor, for the purpose of bringing into existence, and establishing, and maintaining the usefulness of the Farmers' Register, through all difficulties, and all the numerous sources of vexation and annoyance which can scarcely be compensated by pecuniary profit, and which have been increasing more and more from the commencement of this enterprise to the present time. The most important of these inflictions, the costly and most disagreeable connexion with hundreds of non-paying subscribers and "*patrons*," it is hoped will be effectually removed by the sacrifice now offered to be made in greatly increased expenditure for advanced or prompt and sure payments.

From the first commencement of this publication, reduced prices have been fixed for joint and advanced payments, and especially for such as brought in new subscribers. The last and most considerable reductions, offered last year, were by some old subscribers so misconstrued, as to be considered as bearing unjustly and disadvantageously on their class. As the like misconception, however groundless, may attend the still more liberal, and more easily available deductions now offered, the editor asks leave, for full explanation, and for the first, and as he hopes, the last time, to obtrude upon his readers in general, some of the small matters of personal and private interest and concernment, which must necessarily, and at length, be brought forward.

Ever since this publication has been in existence, it has been the object of its conductor, to extend its circirculation, by every honorable and proper means. But he has not resorted, and will not resort, to other means that are deemed almost essential to the prosperity, if not existence, of many periodical publications. He has scorned to beg or buy, or exchange or sell puffs and undeserved praises; and therefore has gained nothing in popularity, or extended circulation, from the operation of that very general system, and nothing of favor or of money has been gained in the still more dirty profit that would have been perfectly available, by making this journal a puffing machine for all who would pay, directly or indirectly, for its use.

Neither are regular travelling agents employed to procure subscriptions by personal solicitation, and who, for some periodicals gain a hundred names by such importunity, where one would have voluntarily offered his support, upon mere knowledge of the existence and character of the works. There is nothing in the business itself of an agency to procure, in a proper manner, subscriptions to any publication, which is otherwise than respectable and honorable, or wanting in delicacy and propriety. But so many persons totally deficient in these qualifications, have been employed by northern publishers, and they have acted so much more like sturdy beggars, (to whom the solicited subscription money would be given as alms, and merely to get rid of their importunity,) than like gentlemen offering an exchange of equivalent values, that this kind of agency business has been long stamped with discredit; and few persons who have a proper degree of self-respect will risk incurring the suspicion and odium now attached to the business, by seeking subscriptions to any work, amongst strangers. Hence, the market is open only to publishers and agents who have no such scruples; and accordingly they profit well by the virtual monopoly. For such is the indolence of most men, and their unwilling-

ness to refuse what is asked; (and especially does the remark apply to the people of these southern states,) that twenty subscriptions are made to publications, which are neither wanted or prized, because urgently begged for, face to face, where one would be gained without such personal solicitation.

Being debarred, by proper and sufficient considerations, from these modes of obtaining support for, and extending the circulation of the Farmers' Register, there remained one other, which is also usual, and which seemed free from any objection, save the cost in money, or possible risk or loss, to the publication. This was to spread abroad gratuitously specimen numbers, and to offer inducements to subscribers themselves, old and new, to render this good service, and to accept the profits, (for themselves or for others,) of the agents and the collectors whose employment for this publication has been abandoned. In many cases, the putting out some one volume as a specimen, even at a loss if considered alone, may gain subsequent and profitable circulation to a number of volumes. Acting upon this plan of making known the work to persons who would not of themselves seek the knowledge, thousands of separate numbers have been distributed gratuitously; and in pursuance of the same system, and from the beginning, and in the earliest and all the publications of conditions, new and joint subscribers have been invited by reduced terms, upon the expectation that all such who, after trial, might approve the work, would continue as subscribers at the regular and necessarily higher price of single subscriptions. Independently of the private interest and gain of the publisher, it is manifestly a gain to the public, and of course to each individual subscriber, that the circulation of the work, (if it be valuable,) should be extended as far as possible, to insure its stability and increase its usefulness.

But because the work has been, in this manner, and for these reasons, offered on certain conditions at prices much reduced below the regular and usual rate of single subscriptions, it has been erroneously and strangely inferred that the publication could have been afforded to all paying subscribers at the lowest named rate; and that those who did not choose to avail of the conditions of reduction, suffered the injustice and disadvantage of being over-charged.

If the means proposed and offered, had, before the commencement of the printing of vol. vii, induced a quadrupled or even trebled subscription, then, indeed, the price might have been reduced, and profitably, by one half to all subscribers, and with no other conditions than the making the reduced payments all advanced, and all sure, and thus relieve the publication of the heavy charges of collectors' commissions, postage, discount on uncurrent paper money, and all the numerous other pecuniary losses which are of daily occurrence, and enormous in their total amount. Such a change would be a most happy one, for the interest of the publisher, as well as for that of all his *paying* subscribers. It was in the hope of reaching this desirable end that the latter offers of deduction were made, and that a still more liberal offer is now risked. And without succeeding in some means of making payments more prompt and secure, the publication must sink—not for want of subscribers—but for the entire disregard of so many of them of their obligations to the publisher. Had no subscribers' names been stricken from the subscription list, except by their own proper order of discontinuance, the number would have been every year still increasing, and the publication would have been thrice as rich as it is, *in debts* from its negligent patrons. But the list has been diminished and would continue to be diminished under the former system, by the publisher's erasure of the names of debtors.

There are circumstances, not sufficiently (if at all) considered by the public, which cause heavy expenses to a magazine like this, which is and ought to be taken by subscribers only in entire volumes, which do not attend newspapers. Subscribers to the latter begin and discontinue at any times; and the publishers can expand or contract their issues precisely to suit the most fluctuating demand. Not so with this and similar publications. With the printing of the first sheet of each volume, the entire number of copies must be fixed; and the opposite dangers are threatened, of printing too few, or too many copies, for the subsequent demand. Heavy losses from both these opposite causes have been already sustained in conducting this publication; and were necessarily incurred, to make sure of supplying the actual demand. It will be plain enough to any who will reflect, that to supply a certain and previously known demand, 4000 copies of a volume could be afforded to be printed at a rate of subscription price, which if doubled, might be less profitable, for an impression of 1500 or 2000 copies, issued for an uncertain demand.

Upon all the grounds stated and referred to, it is earnestly desired by the publisher that every individual subscriber will avail of the offer made to him; and thus bring to the work directly a doubled subscription, and probably, indirectly, twice as many more.

Before quitting this subject of personal and private interest, the writer will use the occasion to remark on another erroneous opinion, which he has reason to believe is prevalent. This is, that this publication has been very profitable to the proprietor, and so much so that a large abatement from the former price and income, would still leave abun-

dant profit for the capital invested, labor and risk.

It is very true that, if considered alone, and as a mere publisher's speculation, and not in its bearing on any other business or capital of the actual proprietor, this publication has been throughout productive of good profits upon its cost. And much larger have these profits been than the early expectations of the proprietor, or those of any of his friends, when he first proposed, and when he commenced the work. No one with whom he consulted then expected any considerable profit to be reaped, and nearly all predicted that loss would be the almost sure result of the undertaking. This is certain—that not another individual in Virginia would have incurred the actual and great risk of failure, and pecuniary loss, by making such an attempt. The incurring of such risk should not be overlooked in the estimate of what profit is justly due to the adventurer; but it is not denied that the pecuniary returns from the publication, if considered alone, have amply compensated both the risk and the expenses. If the public pay a sufficient price for the publication itself, the publisher has no right to count on more, upon any other account. He has no claim on the public for losses incurred thereby in other things. But these losses are not the less important to himself; and he will presume here to say, that if he had attended properly to his private affairs and previous employments, (which have been necessarily and greatly neglected,) and had never commenced the business of editor and publisher, he would have made much more profit and with much less toil and difficulty. He will never cease to prize highly the honor of having been the editor of the Farmers' Register—nor to value, beyond any amount of private profit, the public services which that work has been enabled by its supporters and contributors to perform. But so far as *money* is the value in question, the conducting of the Farmers' Register has not brought enough profit to pay for losses in other business thereby neglected, and the waste of other funds, caused by the necessary change of residence and of habits, as well as of pursuits.

RECEIPTS FOR THE SMITH FUND.

The subscriptions already made towards the "Smith Fund," proposed at page 500 of this volume, amount to about $1200. The editor will acknowledge in the Farmers' Register in the following manner, the several sums as received, and for which he will be accountable, until expended under the direction of the committee.

Subscribed and paid by

Ed. Ruffin, Petersburg, Va.	$100
Gen. John H. Cocke, Fluvanna, Va.	75
Thomas S. Pleasants, Chesterfield, Va.	100
Rev. Sidney Weller, Halifax, N. C.	100
William J. Dupuy, Petersburg, Va.	30

Committee to manage the Fund.

Edmund Ruffin
John H. Cocke
Thomas H. Pleasants.

The fund, to the extent received, will be disposed of, without much more delay; and therefore those who may design to aid the object, are desired to act speedily. All contributions must be placed in charge of Edmund Ruffin, Petersburg, Virginia.

LEGISLATIVE AID TO AGRICULTURE.

No. 3.

Agricultural periodicals and school books.

According to the test which was adopted in the first of these numbers, which merges all the proper governmental action for aid of agriculture, into the providing and conveying of instruction, there can be few better modes than the causing the publication and general diffusion of cheap books and papers on agriculture. It is not designed here to argue in support of the value of reading, to all practical cultivators—nor to defend what is contemptuously called "book-farming." The observations which will follow are offered on the supposition that the value of the knowledge of agriculture to be derived from books, and the improvement to be achieved by the aid of the press, are fully acknowledged by all. The question is merely as to the cost at which such advantages may be conferred; and in this respect of cheapness, this mode of governmental action will bear comparison with any other.

Most of the agricultural reading furnished in this country is by periodical magazines and newspapers; and this is decidedly the most attractive and cheapest, and altogether the best mode for the small proportion of the agricultural community who have enough of the desire to be thus informed, to pay even so small a price for the benefit. But, in Virginia and the south, this demand is so limited, that probably not three individuals in a hundred landholders, either enjoy or have learned to appreciate this advantage. In the northern states, the more general demand has rendered printing much cheaper than in the south, and the consequent greater cheapness of agricultural papers serves to induce a greater number to buy and to read. But here, there exists not enough public spirit to cause a large demand, and without such demand, no periodical publication can be issued at less than double the price which would be ample under opposite circumstances. If the state government could beneficially aid in producing here the desirable results of a very cheap and very abundant supply and wide diffusion of such works, there would be few more efficient means for spreading the knowledge and stimulating the improvement of agriculture. A mere insurance against loss for a year or two, might be sufficient to induce a publisher to issue a journal at the lowest price: and when the large issue was once taken up by subscribers and readers, the measure

might be safely left to its own support. There might, however, be difficulties in adopting measures for such a scheme: and there is an obvious difficulty in discussing them in this place. This branch of the subject will therefore be dismissed from further notice.

But there is another mode by which the state might well and easily interpose, by spreading abroad agricultural and other useful publications, to great extent, and with the most sure operation, and yet save money to the treasury, or to the fund for education, by the measure, instead of paying more for the benefit so derived.

For a long time there has been paid from the Literary Fund, for the expense of tuition in the primary schools, $45,000 annually. More recently, the annual appropriation for this object has been raised to $70,000, which sum is pledged to be continued. The school commissioners are limited to an expenditure of five per cent. of the whole appropriation, for the purchase of books for the pupils, which is $3500 a year; and, from that limitation having been found necessary, it is fair to presume that the whole of the five per cent. has been, and will be, generally so expended. Now the books bought for this purpose are, of necessity, of the same kinds of northern publications which are used to supply all the other schools of Virginia—proceeding from the fertile sources which every year send forth new editions, (or at least new title pages so marked,) and for which perpetual changes, as well as for the distinct works, every parent is taxed so heavily and incessantly during the time of the tuition of each of his children. These books must also be bought by the school commissioners at retail prices; and these prices, as will be afterwards shown, are at the least four times as high as the like or better selected works could be printed and sold for in Virginia. This last assertion, will, at first, appear incredible; nevertheless, its truth shall be clearly established.

Of the $3500 of the Literary Fund thus expended annually, one half may be supposed to be for books designed for pupils to learn to read. For this, the main object in view, they serve as well as any would. But the subject matter contained is generally useless, and in some cases hurtful; for this is one of the channels through which northern abolitionists have distributed their false doctrines, and endeavored to impress them upon the tender feelings and weak minds of young children. But put aside this ground of objection, and let it be supposed that no more evil than good matter of instruction is conveyed by these books, and that, in these respects, the opposite sides of the account stand balanced; still, their only good purpose, that of enabling the pupil to learn to read, could as well be effected through other books which would also convey useful information, and instruction. For example, suppose that all the reading books used for the younger pupils in the primary schools, were on subjects of practical agriculture, the mechanic arts, and things useful in domestic economy. The subjects read and studied in books during childhood and youth make the most lasting impressions; and while the boy was learning to read as well as by any other means, he would also be storing up information which would be of value to him throughout his future life and labors, and which might otherwise never come within his reach. But this would not be all. The attendance and devotion to study of the pupils who are sent to schools at the expense of the state are, unfortunately, very slight, and the services very irregular and short. Their books cease to be school-books as soon as the owner leaves school; and this probably happens in every case on the average, after one year's tuition. At present, the books are then useless; but in the supposed case, they would continue to be useful, in whosever hands they might fall. Even when carried home by a diligent and continuing pupil, the contents might attract the curiosity, and serve to instruct the father, as well as the son. In this manner, the waste and loss of the books so furnished by the state, (and such waste and loss must always be great under the very bad existing school system,) would conduce much more to the general good, than the direct and designed uses, as mere school books, have ever done. If only half of the appropriation, or $1750, were expended in the kinds of books recommended, small as that amount is, it would be as the distribution of widely but regularly dispersed seed, which would produce a future growth of knowledge, (which is both power and wealth,) exceeding in value a thousand fold, all the cost of the sowing. Even the amount of agricultural reading which this small annual expenditure would pay for, when fully used and well studied, (which this mode of distribution would insure,) could not fail to cause a great increase in the spreading of agricultural knowledge. But this gain will be the more highly appreciated, when it is considered that the whole of this new supply of instruction, would be furnished to a class of cultivators who otherwise would read nothing on the subject. In this manner, to create and diffuse a new desire for such reading would be another important operation of the plan; for when an interest was once felt, and an appetite for information excited in such readers, they would, at their own cost, continue to seek and to profit by the instruction which is to be gained from similar sources, and at so cheap a rate.

So much for the worth of the results of this humble plan; now for its expense and its economy, considered merely in a pecuniary point of view.

Because books printed in the northern states, especially school-books, almost exclusively supply the demand of Virginia, and because the few books which are printed in this state are usually higher priced, and yet yield but little (if any) profit to the publisher, it is therefore, and generally inferred and admitted that books cannot be here printed and furnished with fair profits, as cheaply as is now done by northern publishers. This is very far from being true. The only reason why books are not printed in Virginia, at lower prices than those of the like kinds sent here from the north, is because there is not sufficient sale to pay for the enterprise, whether at the lowest or the highest prices. The principal publishing booksellers of the north possess a virtual monopoly of all the southern market—a monopoly, which, though created by circumstances, and not by law, is much more operative, and will be more difficult to break down, than any made by legal enactments and designed governmental policy. The manner in which this monopoly is fixed and operates upon the consumers, has been already treat-

ed of in a former part of this journal, (at page 263. Vol. VI,) to which the reader is referred. It will be enough here to show, and that will be done clearly, that if sufficient demand of purchasers existed, such as the northern publishers for southern supply now enjoy, that printing, and the manufacture of books, can be executed so cheaply here, as to furnish like work at prices far below those now paid for the present and usual supplies, and for which hundreds of thousands of dollars, are every year paid from the south to the northern publishers.

It is not necessary to fatigue the reader with explanatory details of the business of printing, to obtain his conviction, and ready admission, that the cost of printing books will be diminished, and in a greatly increased ratio, according to the extent of the impression, or number of copies printed for each edition. The "composition," or arrangement of the types, and putting them in proper manner on the press, in a small edition, or number of copies, forms the far greater part of the whole cost. But that element of cost is precisely the same for an impression of 300, or for 30,000 copies of the work. Therefore, the item which makes the principal part of the expense of each copy of a small edition, sinks to the least, and to almost nothing, in one of a very large edition. Thus, a volume, for which the mere printing would cost 50 cents, if one of an edition of 500 copies, would be as well paid for at 5 cents, if 20,000 had been contracted for.

For the purpose of making these statements more clear to the readers who may be well inclined to aid in correcting the existing evil—and also the more open to correction to any others who may be disposed to question or deny the results—some particular estimates have been obtained from a printer of the best qualifications, so as to show at how much lower prices the cheapest of northern books might be printed here, provided there existed a certain demand for editions of 10,000 copies.

One of the ordinary reading books now in common use in the English schools of Virginia, was taken, at hazard, for the purpose of estimate. It is the 'Eclectic Reader' of 324 pages. It is plain print, (without illustrations or engravings;) and in plain binding, it sells in our bookstores, at retail, at $1 the copy. This particular description of so unimportant a book is deemed necessary, because, according to usage, it will scarcely remain in existence a year hence. It will by that time have performed its intended office, of being *sold* to supply every school whose accommodating teacher will require its purchase; and it will then be superseded by a newer edition, or some other compilation of like purpose and value, and of like transient reign. We speak not of its contents, which probably, like its price, are about a fair average of the general supply. Of this work, to be printed as well and on as good paper, a printer in Virginia, could furnish in sheets an edition of 10,000, for $1527, which is less than half a mill per page, or per copy, about - 15 cents.

Add for binding, suppose - -	12	
	27	
Retail price of the northern copies -	100	
Difference per copy - -	73	cents.

Another still more striking comparison will be offered with other northern publications which are universally known, and which have been generally supposed to be sold at a loss by the religious and benevolent institution which furnishes them, and to have reached the *ne plus ultra* of cheapness. These are the religious tracts published by the American Tract Society, in Philadelphia. The standing price of these publications, in pamphlet form, in small quantities, is 1 cent for 10 pages; and by large quantities, 1 cent for 15 pages. Similar work can be executed in editions of 10,000 copies, under all the present disadvantages of the printing business in Virginia, and would afford ample profit to the printer, at the still lower price of 1 cent for every 20 pages. When it is considered that the heretofore limited and uncertain demand for printing in the south necessarily makes the labor more costly to the undertaker, and the best services and talent more difficult to be obtained—and that with enough enlargement of business, the expenses of printing could be as much reduced as they already have been in the northern cities—the foregoing comparison of prices will be still more remarkable. The estimate of expense and of price, here, is made at the necessarily higher rates heretofore and usually charged for book-work in Virginia, executed by small hand-presses; and the northern editions, and particularly those of the American Tract Society, are produced at less cost by one third, by means of cheaper materials and better and cheaper workmen, large presses, worked by steam or by horse-power, stereotype plates, and editions which sometimes extend to 100,000 copies, or more. A printer in Virginia, after acquiring these additional and great facilities, (which certainly will follow sufficient increased demand for his products,) could, in proportion, still more reduce his prices, without lessening his profits. But at present, and under all the existing disadvantages caused by the peculiar existing circumstances, a printer in Virginia could make greater profits than any of his brethren here have ever done, by printing and selling works in the form and manner of the publications of the American Tract Society, at prices lower than these are sold for. Thus will appear, (what few persons who have subscribed to aid this great benevolent and excellent plan would have suspected,) that the works of this society are, or ought to be, very profitable to the publishers, as well as benefical to the consumers.

From these general statements, (to which no contradiction is feared, and of which the truth can be tested by reference to any intelligent printer,) it will sufficiently appear, that nothing but sufficient demand is required to make the trade of manufacturing books in Virginia highly profitable. But it is impossible, in the present state of things, for any individual to break through the existing monopoly possessed by northern publishers, or even to venture to compete with them. Suppose one were so bold and imprudent as to incur this risk, and were to publish some good school-book, which is the kind for which there would be the best chance for selling. If he prints a small edition, the price must necessarily be higher than the prices of those already in possession of the market; and of course his work could not come into competition. If he issued a very large edition, and with the view of being enabled to sell at a lower price

than any other, still, for want of all the arrangements and means so long and systematically used by others, he could not by possibility sell as many copies as would pay half the cost. These truths are so well known to all connected with the trade, that it is very rarely, and under some very peculiar circumstances, that any printer in Virginia will dare to publish a book for sale; and even every southern author, to get his work before the public, either for his honor or his profit, must, of necessity, submit to have it issued, and introduced to his own state, by a northern publisher, even though he could have the printing done as cheaply, and more faithfully, at home.

It may be considered that the means of remedy proposed for this evil condition of things, are very feeble, and would be but slightly operative. This is admitted; but nevertheless, as an auxiliary or even single means of diffusing agricultural knowledge, the measure would be as important as its exercise would be cheap. Suppose the exercise of governmental encouragement and economy united, was limited to the expenditure of the regular annual cost of books, of $3500, which might serve to supply enough agricultural reading books to all the primary schools for four years use, and (supposing books for reading to be one-half of all furnished,) this would save to the fund just half that amount, or $1750. So much of the effect, the saving of expense, it is presumed would not be objected to by the most frugal and sparing, or most fastidious of legislators. Suppose for greater cheapness, the agricultural tracts to be issued in the usual form of the religious tracts, or as neat and well covered pamphlets, and at the ample price of half a mill per page, and $3500 would pay for 10,000 copies of as many works as would amount to 500 pages altogether; or any one book of 100 pages would cost only five cents the copy. This would be for one, and so small a matter, a great saving to the education fund, and to agriculture a great benefit, in the wider diffusion of so much instruction.

Further: if the books to be thus republished by order of the state, were judiciously selected by a competent tribunal, (which of course ought to be done,) and were as suitable for the use of schools as any others, their great cheapness and high character would insure their being received into all schools of the state, if not of other southern states. And for the chance of meeting this additional supply, the publisher could afford to issue many thousands of copies more than the state had contracted for. Thus the joint benefits of spreading agricultural instruction, the guarding against unnecessary expense on the part of thousands of private individuals, and the building up a profitable manufacture, and both a home and export trade, would all be aided, by the same measure, and more and more with the continuance of the system. Views of economy and profit would alone soon make manifest the advantage of extending such a mode of publication to the best of other kinds of books needed in schools; and even if public spirit did not forward the result, private interest and economy would soon cause these cheap and standard books to be sought for, and used in every southern school. Putting aside the more important considerations of aiding the diffusion of knowledge, and especially of agricultural knowledge, this anticipated result would be highly important and valuable to the manufacturing and trading interests of the state. In very large editions, the mere cost of the blank paper becomes the greater part of the whole expense; and, therefore, if the gross amount of $100,000 should ultimately be so received by the publishers of cheap books, more than $50,000 of that amount would be paid to our paper manufactories. This is also a matter of no small importance to the manufacturing and commercial interests of Virginia; and well worth the consideration and care of the legislature, even if the interests of education and of agriculture are altogether disregarded.

EXTRACTS FROM THE ADDRESS TO THE AGRICULTURAL SOCIETY OF FREDERICKSBURG, ON ITS 21ST ANNIVERSARY.

By James M. Garnett, President.

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Another experiment was with the Irish potato, by drawing the shoots from the whole tubers when they were about four or five inches long, and setting them as is now generally done in the Carolinas, with the sweet potato. The drought and heat again prevented me from ascertaining more than the following facts: that the shoots or sprouts will grow with as much certainty as cabbage plants—will produce quite as much (at least they did so in this trial,) as the whole roots; and that the practice will save both some seed and labor; for the shoots can be drawn and set somewhat sooner than the whole potatoes can be cut into small pieces, dropt and covered. In regard to this crop it is worth mentioning, that it failed in every part of the state from which I have received any accounts, except in two cases in my own neighborhood. In both these, after the ground was well prepared, the potatoes were deeply covered with straw or leaves, and left undisturbed until they were dug. Both produced, as I have been assured, quite as well as usual, and the fact, I think, proves conclusively, that this method is best; at least to the extent to which our own farms will furnish straw and leaves enough to cover the potatoes, since the mere labor of collecting and covering will not exceed, if indeed it will equal, that of the culture usually given in any of the other methods. The covering plan saves all work, but the first, at the same time that it manures the land, and secures that degree of moisture without which no cultivated crop can long withstand the effects of those frequent and excessive droughts to which our climate has been subject for several years past. Our sufferings from this agricultural scourge, especially during the past season, have thoroughly convinced me of the following facts: that guinea-grass, lucerne and orchard-grass, (as in the order named,) resist drought better than any others yet known to me; and that the single coulter, freely used, during the early growth of corn, is worth all other implements in present use, put together, for protecting it against the destructive influence of long continued dry and hot weather.

The experiment from which I expected most advantage was made with six varieties of white corn—all said by their respective admirers to be

"the best in the world;" and one variety of the yellow kind called "Dutton," which seems to have borne off the palm of superior excellence "down east," and as far south as New York. All the kinds were planted alongside of each other, on the 10th of last April, and as well as I could judge, in similar soil of equal fertility. Although I knew they would mix from such proximity, and of course that the least productive would derive some benefit from that which was most so; yet I did not believe it would be so great, in one trial, as entirely or very nearly to equalize their products, or prevent a satisfactory development of their characteristic differences. But here again the excessive drought and heat disappointed me. All suffered so much that no conclusive comparison could be made in regard to more than one or two of their peculiar qualities. The Dutton corn showed tassels and shoots on the 20th of June and silks on the 29th. None of it grew more than four or five feet high, and gave so little promise for a general crop that all of it was used at our table. This single trial, I acknowledge, is insufficient to justify an unqualified condemnation; but so far as it goes, it authorizes the conclusion, that it will be far less productive in our climate than any of the large varieties yet cultivated among us. It is certainly what we southerners call a "dwarf corn,"—none of which kinds, although numerous, have ever yet proved very prolific, and are not cultivated, except for early use in the unripe state. The golden Sioux, first introduced among us by Mr. Skinner, the editor of the American Farmer, has heretofore proved the *earliest*. But the Dutton, for aught I know, may have a better claim to preference, and therefore I will say nothing to impede a fuller and fairer trial of a corn with such high pretensions—only adding the caution, not to try it on a large scale.

As to the white varieties tried in my experiment, a few tassels were seen, on the 9th of July, upon what I shall call the Carmichael corn, that being the name of a gentleman in Queen Ann's county, Maryland, who sent it to me, and who is the same that first brought into notice the twin-corn, which I have cultivated for three or four years, in preference to any other I know. This kind also began to tassel and shoot on the same day—the other four varieties not until seven or eight days later, and then so nearly together that I did not mark the difference in time, it being too small to be worth noticing. Of these last four, it is proper, by way of caution, to mention, that the Baden corn was one. It is the kind so widely distributed last spring by members of Congress, under the one name of "*Baden*," although in the parcel sent to me, I counted four distinct varieties, showing that little or no care had been taken in selecting the kind so called, although all perhaps had been sold, in the first instance, under that name, and at a higher price than common. I know well the difficulty of keeping any variety pure, for no grain mixes so readily nor at so great a distance as corn, but I also know that it may be done, as I have seen several instances of it, and the Dutton corn is one, for out of a quart of seed sent to me I did not find a single grain of a different kind.

I made no attempt to ascertain, as I had first intended, the relative productiveness of the different kinds used in my experiment—the drought having rendered it impracticable, as it did every other fair comparison I wished to make of their other qualities. In regard to the Dutton corn, I was satisfied from this trial, as well as by several others reported to me last year, that it never probably can become a general crop in Virginia. To judge however, from appearance, it is heavier than any of our white corns, except the Madeira, so called from the circumstance of its being cultivated many years ago, chiefly for the Madeira market. Why the culture is not continued, I cannot imagine, as it is a variety which is both very early and very productive, at the same time that it bears thicker planting than our common kinds. But since corn is the chief staple in the greater portion of Virginia, *the greatest produce per acre* is evidently the principal, although not the only thing to be diligently sought after and ascertained, for the most productive will always be found the most profitable. That this variety will be known in the course of a few years, I think there is every reason to hope, from the numerous trials now making to determine this point; and that it will be found among the white kinds, I have no doubt. All of these are early enough for the tide-water portions of the state, which is the corn region; and most of those that I have noticed are more productive than any yellow variety of which I have any knowledge. Those kinds have never, I believe, sold more than ten per cent. higher than the whites, and that only in the northern and eastern markets, whilst the best of the latter kinds will be found, unless I am greatly deceived, to exceed the yellow in productiveness, more than twenty per cent.; and in *taste*, (if southern palates were to be the standard,) double or treble that amount. Suffer me here, to give a word or two of caution to buyers, against those who claim to be the lucky discoverers of the best kinds of corn. If *they* ask some two or three hundred per cent. more than the general price of our common varieties, the purchasers may be perfectly sure—either that they are humbugged, or that the seller is one of those Shylock fellows who would see you and yours starve to death, without the least compunction, if he could only make money by it, and escape being tried for murder. * * * * *

(To be continued.)

For the Farmers' Register.

MONTHLY COMMERCIAL REPORT.

The business of the past year has terminated much more satisfactorily than that of its predecessor.

The commercial operations in Virginia have been peculiarly fortunate. Shipments of its principal staple, tobacco, yield larger profits than have been realized for any previous year since 1820, and more than counterbalance the heavy losses attendant on the convulsions of 1837. This result has been produced, however, by the extensive failure of the crop of 1838, and, from present appearances, the small quantity produced will yield as much money as a full crop would in ordinary times. The present range of prices is $7 to 16, including all sorts.

Cotton has advanced about one cent in price; and the present quotations in Petersburg are 11½ to 12½ cts., including none of fine quality—the

crop being inferior. A similar advance has taken place in all southern markets, founded on a belief that the crop will prove 200,000 to 300,000 bales less than the returns of last year exhibit. Foreign markets have also improved, but are not yet such as to warrant the prices paid here.

There has been little variation in wheat and flour. The former commands 160 to 170 cents. Flour (canal) $7\frac{7}{8}$ to 8. Petersburg mills $8\frac{1}{4}$ and Richmond city $8\frac{3}{4}$. Although prices are advancing in England, with a prospect of low duty, little disposition is evinced to venture to so precarious a market, where a slight decline in price subjects the importer to an enormous increase of duty. The product of the last crop in Virginia considerably exceeds the estimates which were formed at the period of harvest.

Corn is worth about 75 to 80 cts. Pork $8\frac{1}{4}$ to $9. X.

January 7, 1839.

CROPS ON THE EASTERN SHORE OF MD.

Queen Ann's county, Md. Dec. 14, 1838.

To the Editor of the Farmers' Register.

As you express a desire to know the state of the products of the year, in the different sections of the country, I can say that the crop of wheat, in the few upper counties of the Eastern Shore was good, as far as it was sown, perhaps above the ordinary product. The crop of oats very short—the crop of corn diminished by more than a half, and the root-crop hardly worth gathering.

TO CORRESPONDENTS AND CONTRIBUTORS.

It is unnecessary to repeat here what the editor has so often stated in former volumes, and which, moreover, is manifest to every reflecting reader, that the great and main value of the Farmers' Register has throughout consisted of the original communications of the many and intelligent contributors to its pages. Whatever the editor has written or done, or whatever any one man can do, even if possessed of far greater abilities, but confined and oppressed by the like unceasing toil, is comparatively of small account, and utterly insufficient to maintain, for a single year, the proper value and interest of an agricultural journal. All those readers who have so essentially aided this work formerly by their writings, and the very far greater number who *ought*, but have failed to render such service to the public, are earnestly requested to give full and proper consideration to these truths; and then to glance over the table of contents of this now closing volume, and see how little has been done, compared even to the former and always too scant aid of the fellow laborers of the editor in the great work of diffusing agricultural instruction, and thereby improving the condition and profits of agriculture. Those who have formerly so ably, and profitably to the public, offered to their brother farmers their lights andexperience in agriculture, through the pages of this work, but who have since relaxed or suspended their exertions, must return to the task; and also invite, and bring in, new hands to share with them the labor and the honor. If every subscriber to this journal, would freely communicate whatever useful facts he knows, and which are not generally known to others, and if such course were pursued regularly, nothing more would be wanting to raise the Farmers' Register to the highest rank of public utility and value; and no greater benefit could possibly be conferred on agriculture, and agricultural interests, by any action of private individuals. Yet how easy would be the performance of such duty; and every one would be speedily and fully compensated for his own share of the labor, in the new value he would derive from the communications of others. Without such assistance, liberally furnished, no agricultural journal of character can long maintain its usefulness, or even its existence.

In looking back on the labors of the last year, the editor has not to reproach himself on the score of failure to do his part of that labor which he had hoped would have been, but has not been, fully shared in by others. The more that others have relaxed their efforts, the more has necessity required that he should exercise his pen; though without the encouragement and cheering aid of companionship in labor, or of any sufficient evidence of concurrent interest, or sympathy, on the part of those for whose benefit his efforts were made.

In addition to the seemingly growing apathy of most of the former contributors to this work, several among the most valued have been recently removed by death, within the space of a single year—and all from the generous south, to the liberality of which the Farmers' Register owes *so much*—but for literary or other labor, *so little*. One of these was that warm hearted and public-spirited old man, Nicholas Herbemont, whose kindly and benevolent feelings, no less than his intelligence, were conspicuous in all his writings. The fate of two others to whom this work also owes much, was the more to be lamented on account of the peculiarly distressing and horrible circumstances of their deaths. Both fell victims to that system of wholesale exposure and sacrifice of life, for private gain, which has been established by the owners of steamers. Hardy B. Croom, with his family, perished at sea by the shipwreck of the Home. Farquhar Macrae met a like deplorable death in the destruction of the Pulaski; and his life was sacrificed by his generous self-devotion, which made him yield his place of security, on a fragment of the wreck, (yet in vain,) for the purpose of saving an aged and feeble stranger and fellow-sufferer.

CONDITIONS OF THE FARMERS' REGISTER FOR VOL. VII. PRICES STILL MORE REDUCED, FOR PUNCTUAL OR ADVANCED PAYMENTS.

I. The Farmers' Register is published in monthly numbers, of 64 large octavo pages each, and neatly covered, at $5 a year, payable in advance. Or, for $5 may be purchased *two copies* of the same current or forthcoming volume, if so ordered and paid for in advance, (or at the time of making the subscription,) in current money, (as described below,) and without loss or deduction for postage, or any other charge to the publisher.

II. Subscribers now on the list, who have already paid the regular subscription price of $5 in the manner above required, for a single copy, shall have the privilege, upon sending a *post-paid* order, of having a second copy of the same volume

sent to any NEW subscriber, without further charge, for that volume.

III. A like privilege will be allowed to every old subscriber who has not yet paid, but who shall do so, as above, before the issue of the 2d number of the 7th volume; thus in effect REDUCING TO HALF PRICE THE COST OF THE WORK TO EVERY SUBSCRIBER, OLD OR NEW, WHO MAY CHOOSE TO AVAIL OF THE OFFER.

IV. If, however, no more than one copy is ordered, the subscription price will still be, as heretofore, $5 the volume; as it is not designed to permit any subscription debt, or payment, to be made for less than $5. And if an order is sent for two copies, without compliance with the conditions annexed, only one will be sent.

V. The price of back volumes, as heretofore, is $5 for one alone, $10 for any three together, and in the same proportion ($3.34 cents for each,) for any number of volumes, except vol. I., which is at $6, and to be furnished only as part of a full set.

VI. ALL MAIL PAYMENTS MUST BE MADE IN NOTES, OR CHECKS, OF PAR VALUE IN VIRGINIA, or of a CITY and SPECIE-PAYING bank of the state in which the subscriber resides.

VII. The risk of loss of payments for subscriptions, sent free of postage, which have been properly committed to the mail, or to the hands of a postmaster, is assumed by the editor.

VIII. All letters to the editor in regard to the Farmers' Register must be post-paid—except such as contain articles for publication.

IX. If a subscription is not directed to be discontinued before the first number of the next volume has been published, it will be taken as a continuance for another year. Subscriptions must commence with the beginning of some one volume, and will not be taken for less than a year's publication.

X. The mutual obligations of the publisher and subscriber, for the year, are fully incurred as soon as the first number of the volume is issued; and after that time, no discontinuance of a subscription will be permitted. Nor will a subscription be discontinued for any earlier notice, while any thing thereon remains due, unless at the option of the editor—(or in obedience to the regulations of the Editorial Convention, copied below.)

General Regulations adopted by the Editorial Convention.

The following resolutions of the Editorial Convention of Virginia, will hereafter form part of the Conditions of the Farmers' Register, and will be strictly observed.

1. "All subscriptions shall hereafter be considered as incurred and due in advance, and for a year's publication, unless specially ordered for a shorter time, and paid for in advance for that shorter time, when so ordered.

2. "No publication shall be sent to the order of any new and unknown subscriber, unless paid for in advance,or satisfactory reference be made to some known and accessible person in regard to the subscriber or his payment. But, in case of an order for a publication, without payment, from a new subscriber who is unacquainted with the conditions, a single number may be sent, containing, or accompanied by, a copy of this regulation.

3. "The names of all subscribers, whose ability to pay may be unknown to the publisher, and who may remain indebted on open account at the end of two years, from the time when the advanced payment was due, shall be erased from the list of subscribers."

[*Resolutions of the Editorial Convention of Va.*

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